ORDER NO. KM49303495C3

# Service Manual

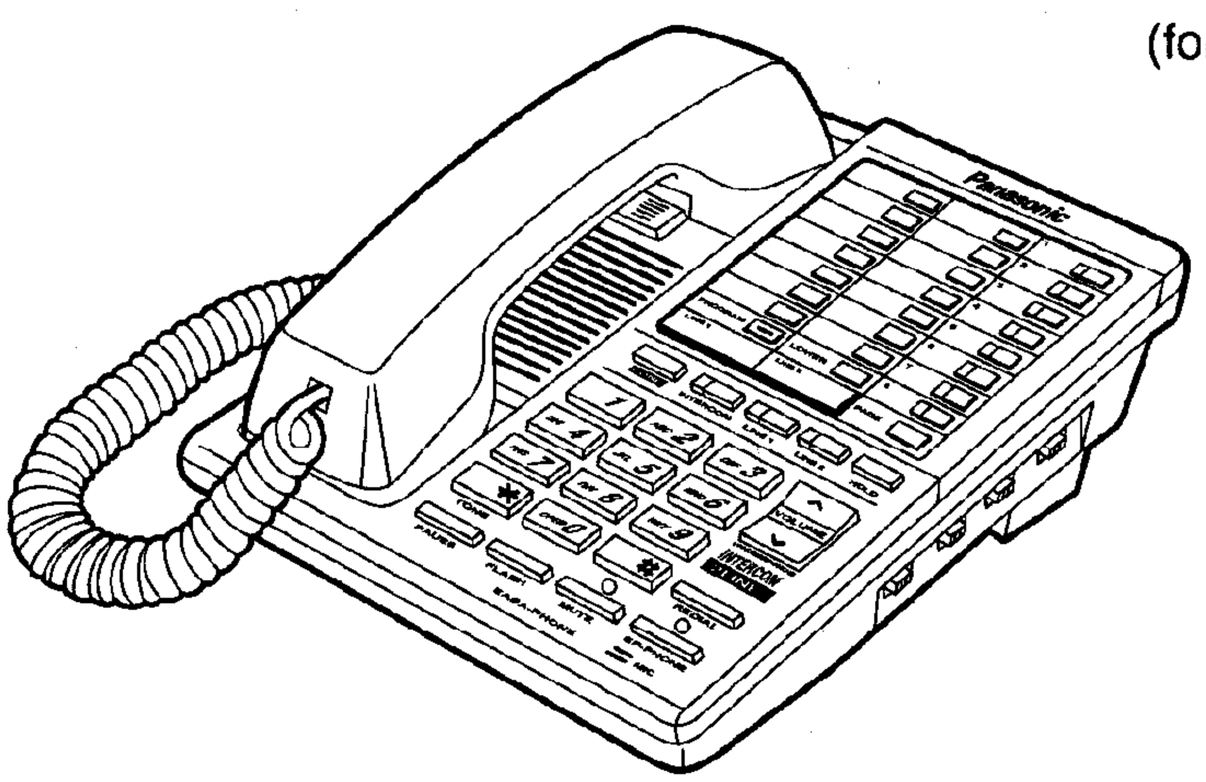
## and Technical Guide

INTERCOM 2 LINE
INTEGRATED TELEPHONE SYSTEM

Telephone Equipment

# KX-T3280

(for Asia, Middle Near East and Other areas)



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**CABINET AND ELECTRICAL PARTS LOCATION\РАСПОЛОЖЕНИЕ МЕХАНИЧЕСКИХ И ЭЛЕКТРИЧЕСКИХ ЧАСТЕЙ**

**ACCESSORIES AND PACKING MATERIALS\ПРИНАДЛЕЖНОСТИ И УПАКОВОЧНЫЕ МАТЕРИАЛЫ**

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**REPLACEMENT PARTS LIST\СПИСОК ЗАПАСНЫХ ЧАСТЕЙ**

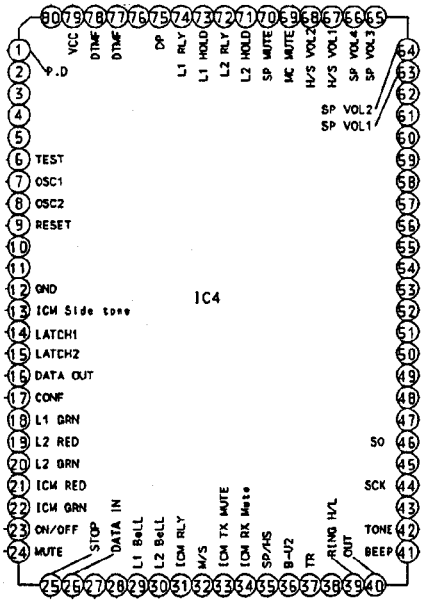
Panasonic

## ■ SPECIFICATIONS

| | |
|---|---|
| Power Source: | Telephone line voltage |
| Memory Capacity: | 28 phone numbers, up to 16 digits for each station |
| Dial Speed: | Tone (DTMF)/Pulse (10 pps) |
| Redial: | When using the handset, the unit redials the last dialed number once. When using the speakerphone, the unit redials the last dialed number up to 15 times within a 10-minute period if the line is busy. (Automatic redial) Automatic Tone-Dial Detector |
| Pause: | Unit; 6.5 cm (2.5″) PM magnetic type |
| Speaker: | receiver unit, 32Ω Handset; 3 cm (1 3/16″) PM |
| Microphone: | Electric condenser microphone |
| Input Jacks: | Telephone line (L1/L2, L2, DC IN) |
| Dimensions: | 7 3/32″×3″×8 15/32″ [180 (W)×76 (H)×215 (D) mm] |
| Weight: | 2 lb. 10 oz. (910 g) [with the Handset] |

Design and specifications are subject to change without notice.

# CPU DATA




| | |
|---|---|
| Part No.: | PQVI4639A15F |
| Program ROM: | 16K byte (10 bit) |
| Counter Clock Frequency: | 32.768 kHz |
| System Clock Frequency: | 4 MHz |
| Power Supply Voltage: | 2.7–6.0 V |

| Pin No. | Description | High | Low |
|---|---|---|---|
| 1 | Power Down | Normal | Power Down |
| 2~5 | Not Used | | |
| 6 | Test | | |
| 7 | System Clock (4MHz) | | |
| 8 | System Clock (4MHz) | | |
| 9 | Reset Input | Reset | Normal |
| 10 | Sub Clock (32.768KHz) | | |
| 11 | Sub Clock (32.768KHz) | | |
| 12 | Ground | | |
| 13 | ICM Side Tone | | ICM |
| 14 | Latch 1 | Line LED | |
| 15 | Latch 2 | EXT LED | |
| 16 | Data Out | | |
| 17 | Conference Control | | |
| 18~22 | Not Used | | |
| 23 | ON LED | Light Off | Light On |
| 24 | Mute LED | Light Off | Light On |
| 25 | Stop Input | Stop | Normal |
| 26 | Data In | | |
| 27 | Key Input | | Input |
| 28 | Key Input | | Input |
| 29 | Line 1 Bell In | | |
| 30 | Line 2 Bell In | | |
| 31 | ICM Relay | Intercom | |
| 32 | Mast/Slave | Master TX 390k RX 330k | Slave TX 330k RX 390k |

| Pin No. | Description | High | Low |
|---|---|---|---|
| 33 | TX Mute | Mute On | Mute Off |
| 34 | RX Mute | Mute On | Mute Off |
| 35 | Speaker/Handset | Speaker | Handset |
| 36 | Back up 2 | Relay On | Relay Off |
| 37 | TR | TR Off | TR On |
| 38 | TR2 | | |
| 39 | Ringer Volume | Ringer Low | Ringer High |
| 40 | Ring Out | | |
| 41 | Beep/Tone | | |
| 42 | Beep/Tone Change | Beep | Tone |
| 43 | Not Used | | |
| 44 | Serial Clock | | |
| 45 | Not Used | | |
| 46 | Serial Out | X | |
| 47~50 | Switch Input | | |
| 51~58 | Strob | Normal | Scan |
| 59~62 | Key Input | | Input |
| 63 | Speaker Volume 4 | | |
| 64 | Speaker Volume 3 | | |
| 65 | Speaker Volume 2 | | |
| 66 | Speaker Volume 1 | | |
| 67 | Handset Volume 2 | | |
| 68 | Handset Volume 1 | | |
| 69 | Microphone Mute | Mute On | Mute Off |
| 70 | Speaker Mute | Mute On | Mute Off |
| 71 | Line 2 Hold Relay | Line 2 Non Hold | Line 2 Hold |
| 72 | LIne 2 Relay | | Line 2 |
| 73 | Line 1 Hold Relay | Line 1 Non Hold | Line 1 Hold |
| 74 | LIne 1 Relay | | Line 1 |
| 75 | Pulse Dial Output (DP) | Make | Break |
| 76 | SEL | | |
| 77 | DTMF Output | Active | Normal |
| 78 | DTMF Output | Active | Normal |
| 79 | Power Source (5V) | | |
| 80 | VTref | | |

## •Pin Description

| Signal | Port Name | Pin No. | I/O | Description |
|---|---|---|---|---|
| Power Supply | $V_{CC}$ | 79 | | Power supply voltage is connected. |
| | GND | 12 | | For ground connection. |
| Test | $\overline{TEST}$ | 6 | I | Not for user application. For Vcc potential connection. |
| Reset | RESET | 9 | I | Used to reset MCU. |
| Oscillation | $OSC_1$ | 7 | I | I/O terminals to/from the Internal Oscillator. For connection of the ceramic filter or the external oscillation circuit. |
| | $OSC_2$ | 8 | O | |
| | X1 | 10 | I | I/O terminals to/from the Clock Oscillator. For 32.768 kHz crystal connection. |
| | X2 | 11 | O | |
| Port | $D_0$~$D_{11}$ | 13~24 | I/O | I/O terminals addressed by every 1 bit. $D_4$–$D_{11}$ are high-current sink terminals supplying a current of 15 mA at maximum to each terminal. $D_0$–$D_3$ are high-current source terminals supplying a current of 10 mA at maximum to each terminal. |
| | $D_{12}$, $D_{13}$ | 25, 26 | I | Input terminals addressed by every 1 bits. |
| | $R0_0$~$RC_0$ | 27~75 | I/O | I/O terminals addressed by every 4 bits. |
| | $RD_0$~$RD_3$, $RE_5$ | 1~5 | I | I/O terminals addressed by every 4 bits. |
| Interrupt | $\overline{INT_0}$, $\overline{INT_1}$, $INT_2$~$INT_4$ | 26~30 | I | Input terminals for external interrupt. |
| Stop Clear | $\overline{STOPC}$ | 25 | I | Input terminal used for transition from the stop mode to the active mode. |
| Serial Interface | $\overline{SCK_1}$, $\overline{SCK_2}$ | 44, 48 | I/O | Clock I/O terminals for serial interface. |
| | $SI_1$, $SI_2$ | 45, 49 | I | Receiving data input terminal for serial interface. |
| | $SO_1$, $SO_2$ | 46, 50 | O | Transmitting data output terminal for serial interface. |
| Timer | TOB, TOC, TOD | 39~41 | O | Timer output terminal. |
| | $\overline{EVNB}$, EVND | 42, 43 | I | Event count input terminal. |
| DTMF | TONER | 78 | O | Output terminal of DTMF signal (ROW). |
| | TONEC | 77 | O | Output terminal of DTMF signal (COLUMN). |
| | $VT_{ref}$ | 80 | | Reference level power supply terminal of DTMF signal. The voltage condition is $V_{CC} \geqq VT_{ref} \geqq$ GND. |
| Voltage Comparator | COMP0~COMP3 | 1~4 | I | Analog input terminals for voltage comparator. |
| | $VC_{ref}$ | 5 | | Reference voltage terminal to input the threshold voltage of the analog input terminal. |
| Division Ratio Selection | SEL | 76 | I | Selects the frequency division ratio of the system clock after the reset mode is activated or the unit is released from the stop mode. Vcc potential connection selects 4-divided frequency. GND potential connection selects 32-division. |

## •Block Diagram for CPU

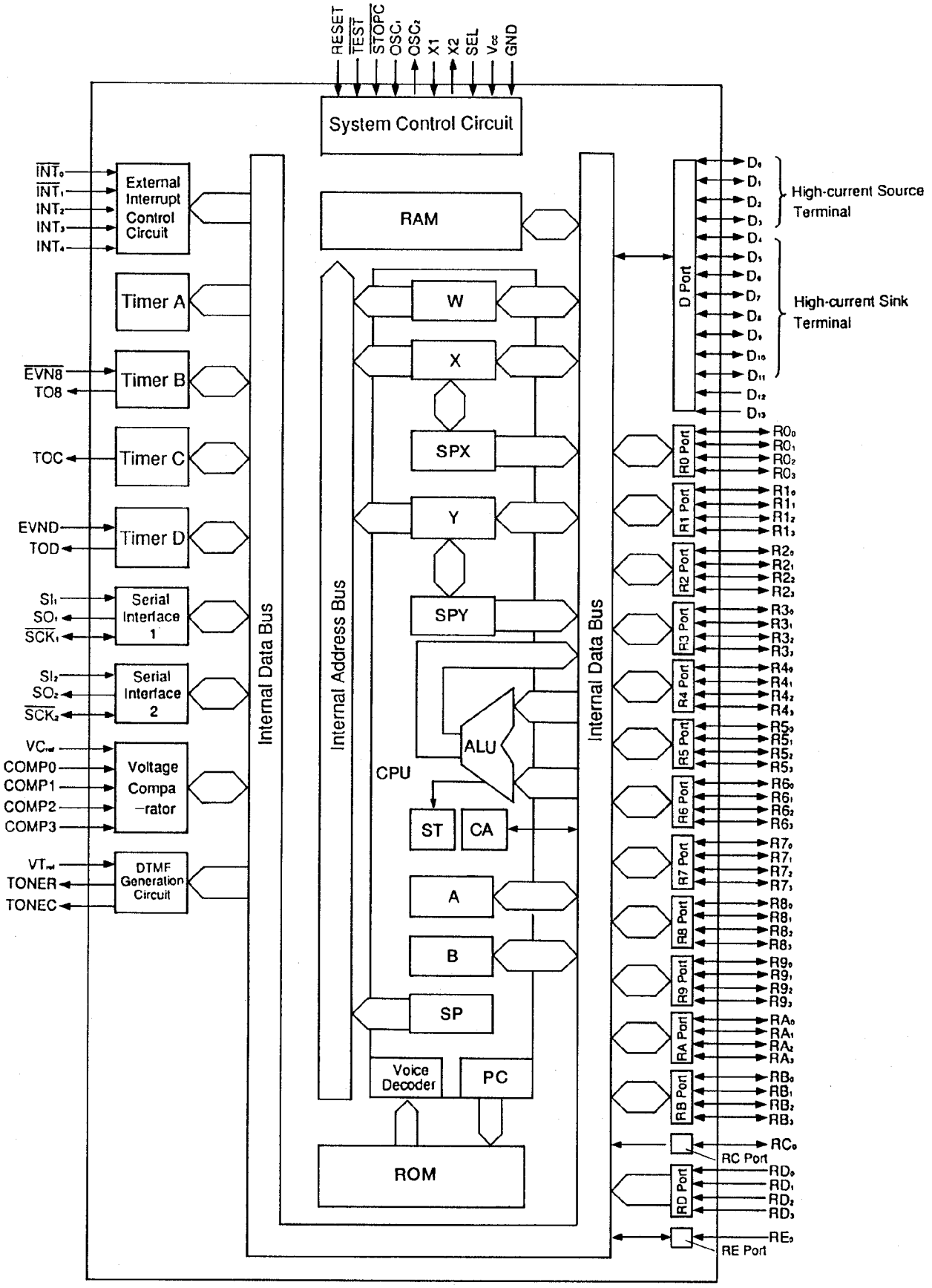
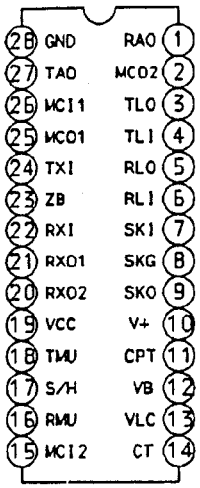



Fig. 14

# SPEAKERPHONE IC DATA




Part NO.: PQVISC79101S

**•Pin Description**

| Pin No. | Name | Description |
|---|---|---|
| 1 | RAO | Output of the receiver attenuator |
| 2 | MCO2 | Output of the speakerphone microphone amplifier. The amplifier gain is set to 34 dB according to the internal resistance. |
| 3 | TLO | Output of the transmitter level detection and inputs of the receiver/transmitter comparator and the transmitter voice detector. |
| 4 | TLI | Input of the transmitter level detection |
| 5 | RLO | Output of the receiver level detection and input of the transmitter/receiver comparator |
| 6 | RLI | Input of the receiver level detection |
| 7 | SKI | Reverse input of the speaker amplifier. The gain varies with the external resistance RSAF. Also, the signals of DTMF can be input through the series resistance and condenser. |
| 8 | SKG | GND for the speaker amplifier |
| 9 | SKO | Output of the speaker amplifier. The frequency characteristics are decided by connecting to the SKI pin in parallel. Normally the resistance of approx. 100 kohm is used and the normal speaker impedance is 320 ohm. |
| 10 | V+ | Power supply of IC. Regulator input of the VB standard voltage and power supply of the speaker amplifier. This pin decides the DC impedance of all ICs by the external zener diode for GND. The zener diode's voltage range is 3 V–7 V. |
| 11 | CPT | The RC network connected between V+ and this pin in parallel decides the time constant of the speakerphone transmitter voice detector. |
| 12 | VB | Output of the ½ V+voltage regulator. The standard voltage of the speakerphone's AC signal system. When V+ is 6 V, the voltage is normally 2.8 V. |

| Pin No. | Name | Description |
|---|---|---|
| 13 | VLC | Input of the speakerphone and volume control.<br>The transmitter/receiver attenuation factor can be controlled according to the rudder resistance (potentionmeter) between VB and GND during speakerphone reception mode. |
| 14 | CT | The RC network connected to this pin decides the transmitter/receiver switching time (response time) of the speakerphone. The C is approx. 10 μF. |
| 15 | MCI2 | The speakerphone microphone amplifier input and input resistance is normally 10 kohm. |
| 16 | R | Input of the control logic for the receiver mute mode. When the logic signal level is "H", the dial mode is set. |
| 17 | S | Input of the switching cotrol logic for the spakerphone handset transmitter mode.<br>When the logic signal level is "H", the speakerphone mode is set. |
| 18 | T | Input of control logic for the transmitter mute mode.<br>When the logic signal level is "H", the TX mute mode is set. |
| 19 | $V_{cc}$ | Power supply of IC and output of the speech network line amplifier. When $V_{cc}$ is 8.6 V, the driving capacity beyond 3,6 Vp-p is normally obtained (when the AC impedance is 600 ohm). |
| 20 | RXO2 | Differential output of the speech network's receiver amplifier. When this pin is used with PX01, the dynamic receiver (150 ohm) or the piezo receiver (100 NF) can be driven.<br>The superior noise clearance characteristics are obtained by the differential output. |
| 21 | RXO1 | Differential output of the speech network's receiver amplifier. The feedback RC to the PXI pin can set the receiver's gain and frequency characteristics. |
| 22 | RXI | Input of the speech network's receiver amplifier and output of the built-in A5 amplifier. During the dial mode, the signals of DTMF can be input through the series resistance and condenser. |
| 23 | ZB | Hybrid input of the speech network and the receiver input of the speakerphone. The line balance network (ZB) is connected between this pin and $V_{cc}$. This network affects the receiver level and the sidetone characteristics. The input of the ZB pin is normally 1 kohm. |
| 24 | TXI | Input of the speech network line transmission amplifier and the sidetone cancel amplifier (A5 amplifier). This pin is power input and has the input resistance of 2 kohm. |
| 25 | MCO1 | Output of the handset microphone amplifier.<br>The gain of the microphone is set to 30 dB. |
| 26 | MCI1 | Input of the handset microphone amplifier.<br>The input resistance is normally 3.9 kohm. |
| 27 | TAO | Output of the speakerphone receiver attenuator. |
| 28 | GND | GND for all ICs except the speaker amplifier. |

# IC BLOCK DIAGRAM

## IC6 PQVIMC33110D

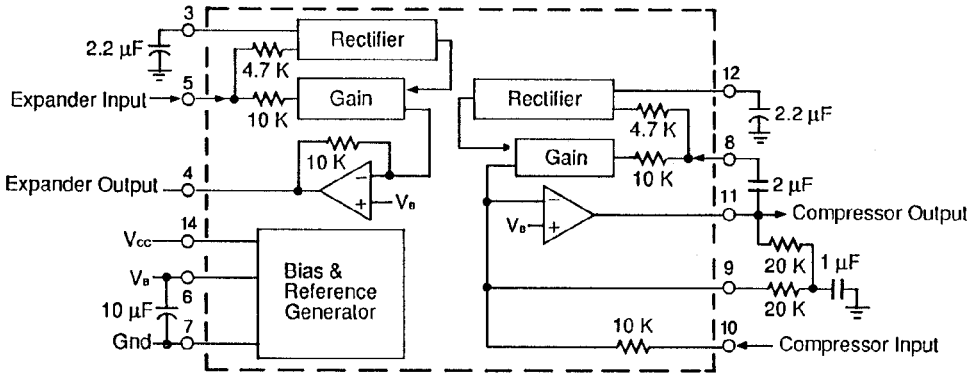
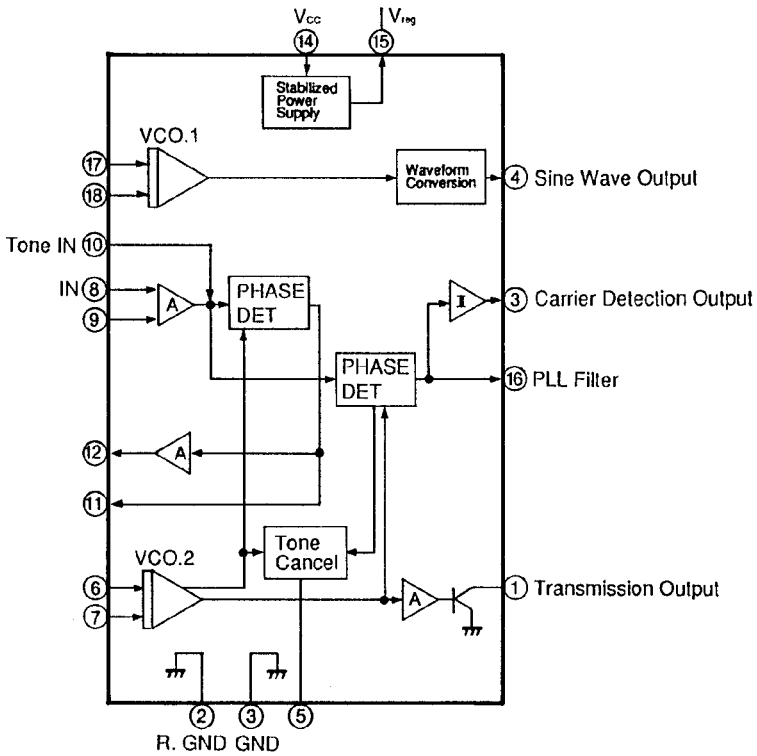



Fig. 15

## IC7 PQVIBA1602L



# ADJUSTMENT

Perform the following adjustment after replacing IC4, VR2 and VR3.

**Preparation:**

1. Set the unit's controls as follows:
   A. Power source voltage .... DC 12 V (KX-A09)
   B. Circuit voltage ..... DC 48 V
   C. Circuit current ..... 40 mA

**Set the Test Mode**

1. Set the ON-HOOK condition.
2. Connect the Test points ▼–▼ by a diode (1SS131).
3. Connect the frequency counter to Test Points ▼–▼.
4. SP-Phone indicator lights go out.

**Master Mode Frequency Adjustment**

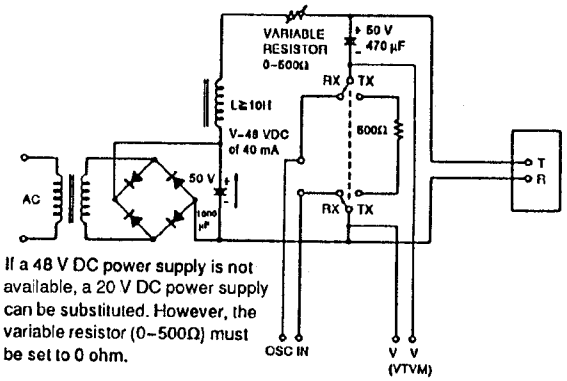
1. Push the "EXT1" key.
2. Extention 1 indicator and Mute indicator are on.
3. Adjust VR3 for a reading of 370±0.5 kHz on the frequency counter.

**Slave Mode Frequency Adjustment**

1. Push the "EXT2" key.
2. Extention 2 indicator and Mute indicator are on.
3. Adjust VR2 for a reading of 410±0.5 kHz on the frequency counter.

Please refer to Circuit Board and wiring Connection Diagram which is located test points (▼).

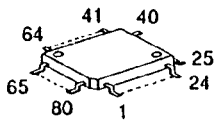
Schematic Diagram of Loop Simulator



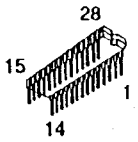

If a 48 V DC power supply is not available, a 20 V DC power supply can be substituted. However, the variable resistor (0–500Ω) must be set to 0 ohm.

Fig. 17

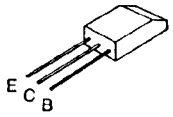
# TERMINAL GUIDE OF ICS, TRANSISTORS AND DIODES



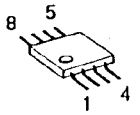

PQVI4639A15F



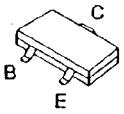

PQVISC79101S



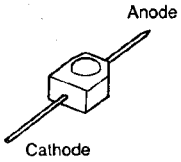

2SA1626



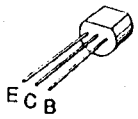

PQVINJM082BM
PQVINJM2904F
PQVIBA8206F



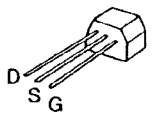

UN521
UN5113, UN5213,
2SB1218A, 2SD1819A



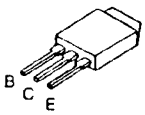

PQVDSLN210V1




2SC2120
PQVT2N6517CA




2SK1398

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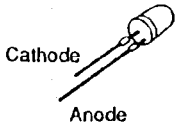
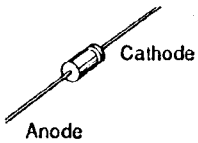
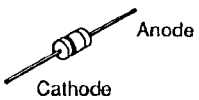


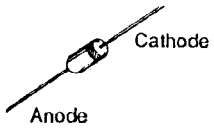

LN28RPL



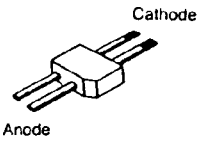

PQVDS5688G



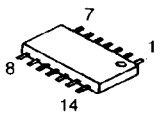

Cathode
MA4091, MA4062
MA4047, MA4180
MA4360



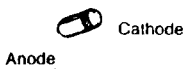

1SS131, MA161, PQVDMZJ5R1C, PQVDHZ3BLL



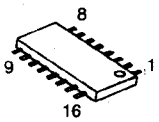

LN02102C13LF



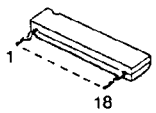

PQVITC4069UBF



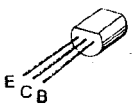

RLS71




PQVIMC33110D
PQVITC4053BF
PQVIMC4094BF




PQVIBA1602L




2SC2235

## ■ FOR SCHEMATIC DIAGRAM

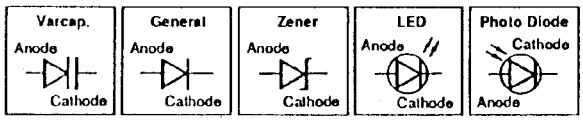
1. S1: Page switch.
2. S2: One touch dialing switch.
3. S3: One touch dialing switch.
4. S6: Intercom switch.
5. S7~10: One touch dialing switch.
6. S11: Program switch.
7. S12: Hold switch.
8. S13~16: One touch dialing switch.
9. S17: Line 1 switch.
10. S18~21: One touch dialing switch.
11. S22: Line 2 switch.
12. S23~30: Extension Key switch.
13. S31~42: Dialing key switch.
14. S43: Ringer selector . (Line 1)
15. S44: Ringer selector . (Line 2)
16. S45: Ringer selector . (Intercom)
17. S46: Volume up switch.
18. S47: Volume down switch.
19. S48: Dialing mode selector.
20. S50: Hook switch.
21. S52: Power failure line selector.
22. S57: Lower switch.
23. S58: Conference switch.
24. S59: Speakerphone switch.
25. S60: Mute switch.
26. S61: Flash switch.
27. S62: Redial switch.
28. S63: Pause switch.

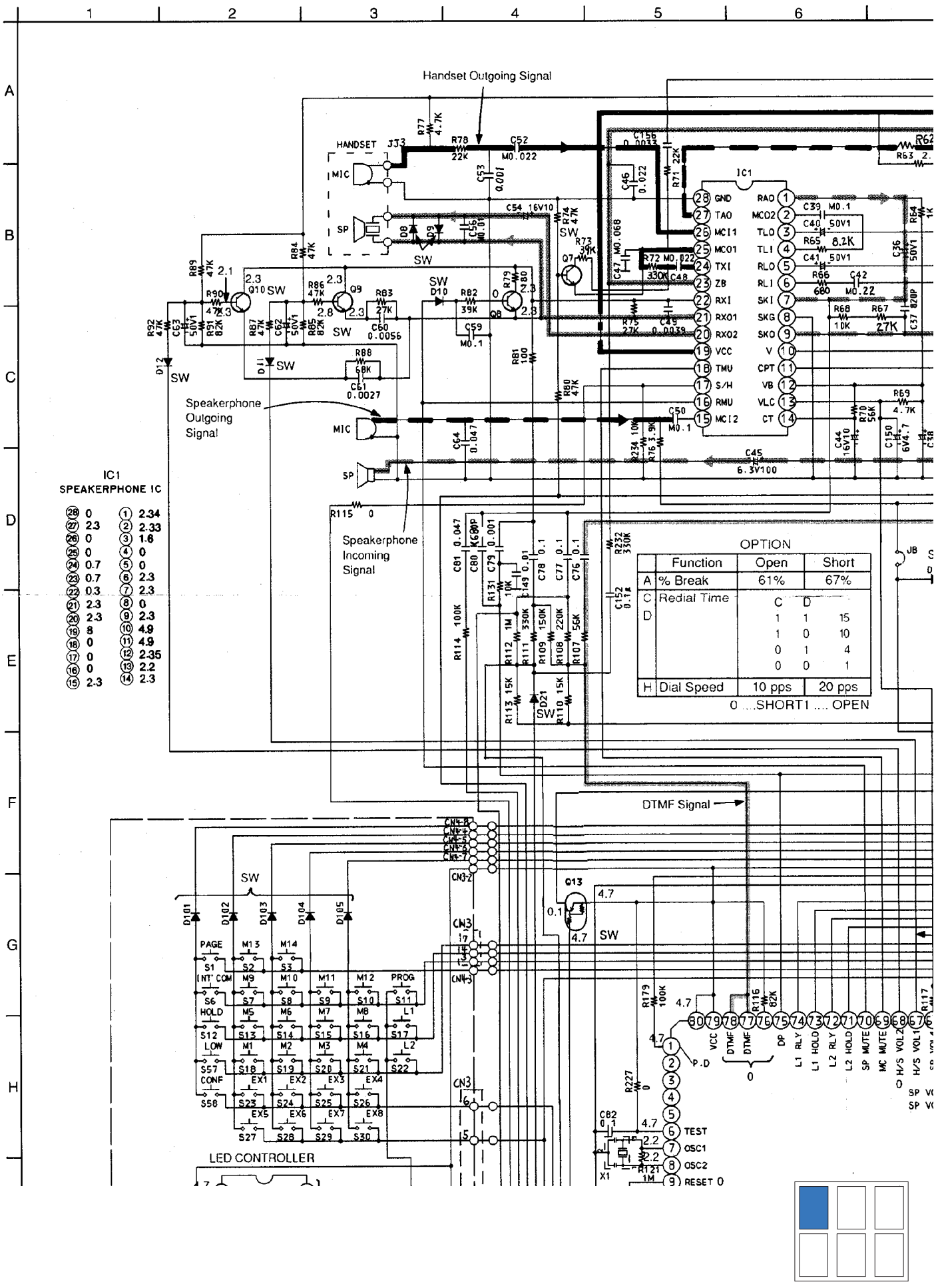
29. DC voltage measurements are taken with electronic voltmeter from negative terminal of battery.
(Add 40 mA to telephone line from the loop simulator.)
●Off-Hook condition, Handset Mode

30. This schematic diagram may be modified at any time with the development of new technology.

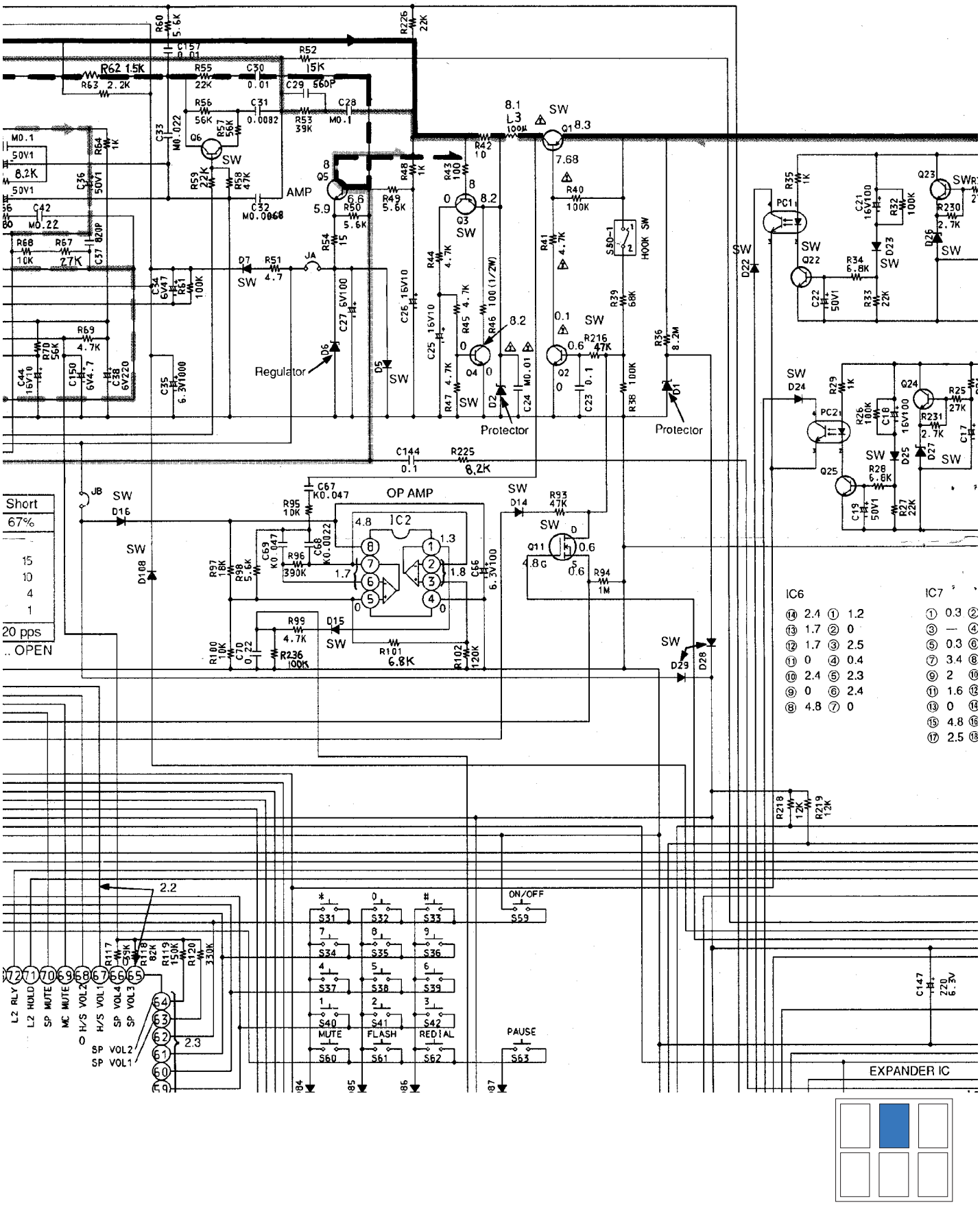
31.

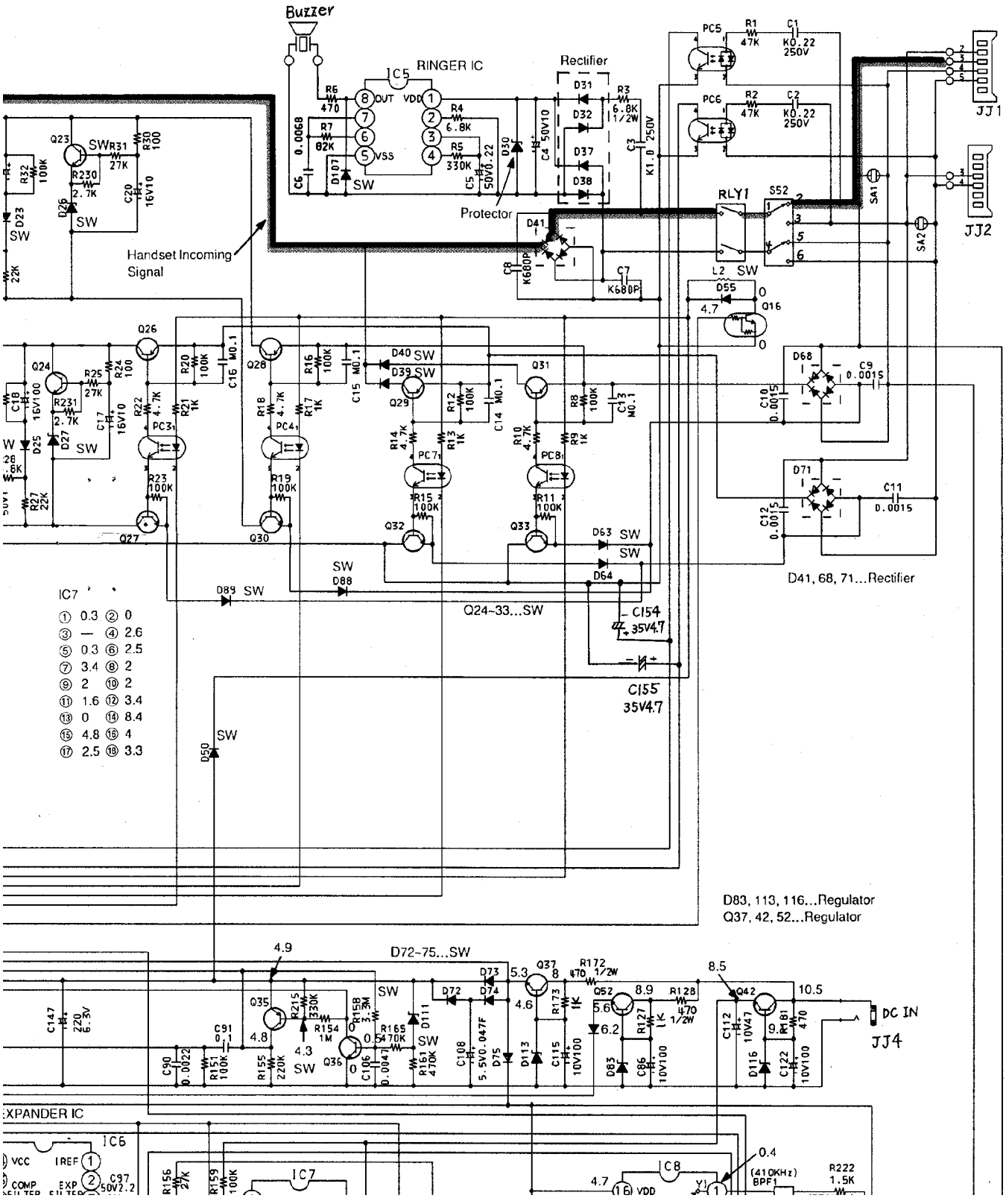
Important safety notice
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

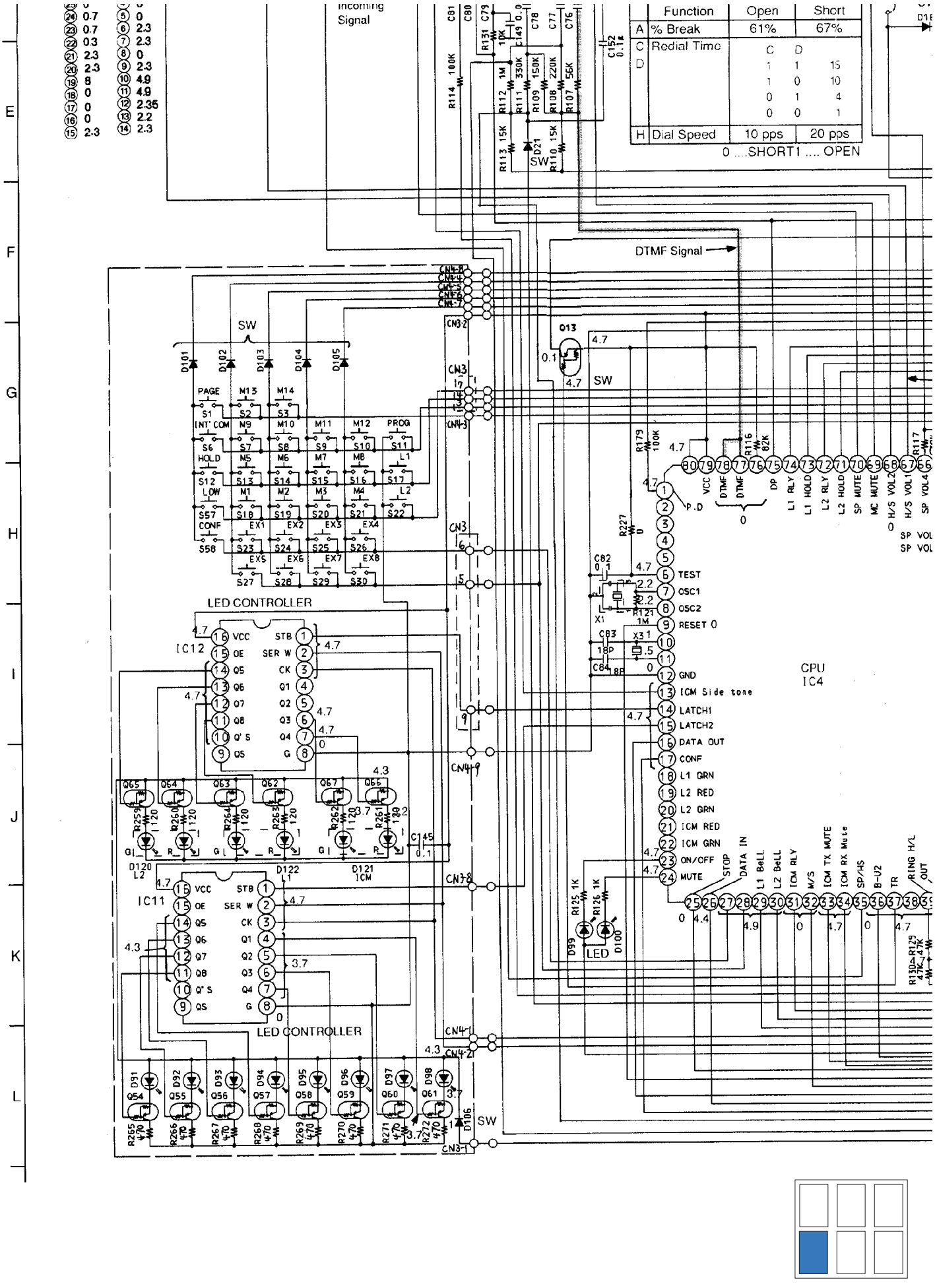


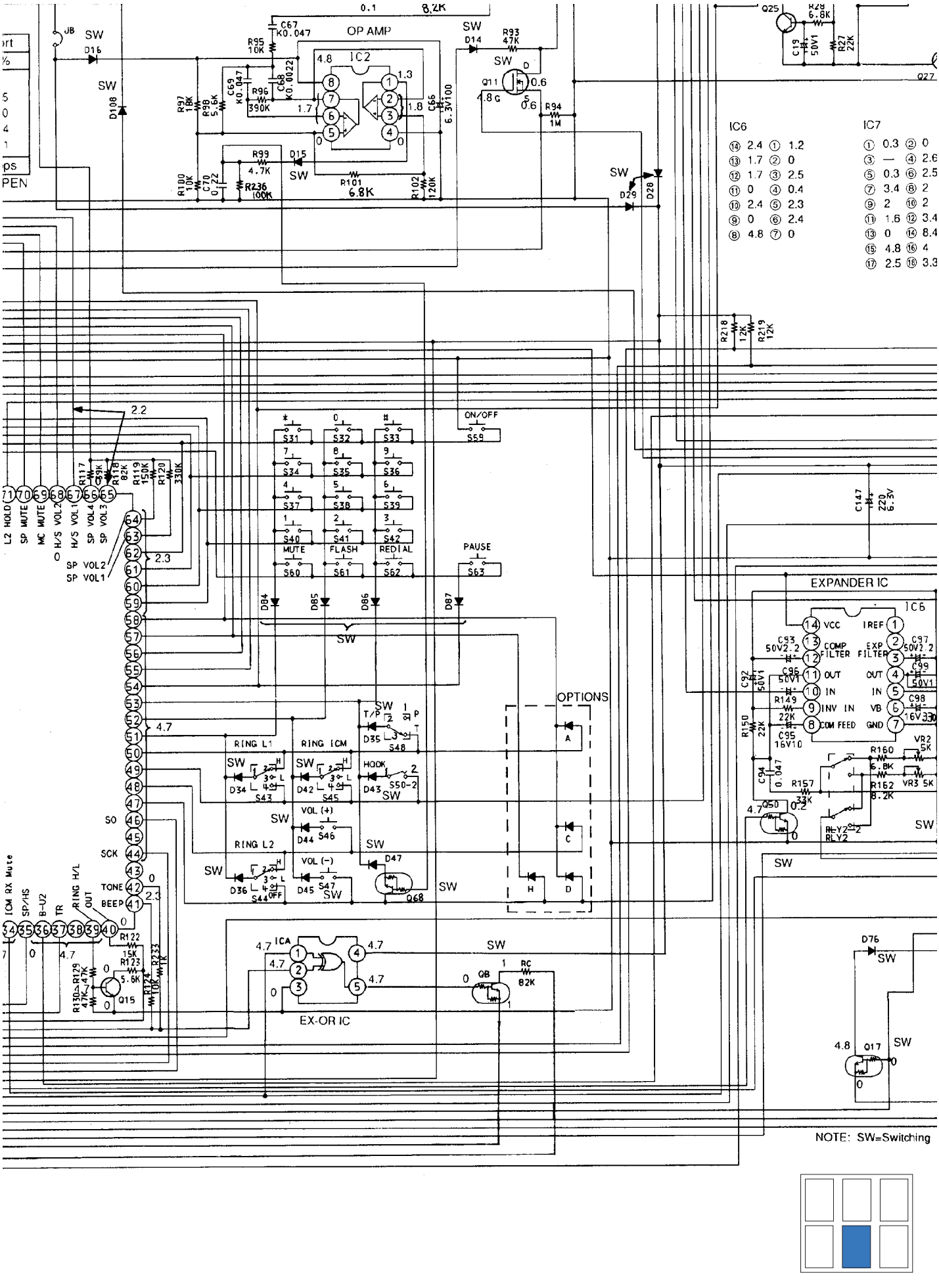

Handset Outgoing Signal
Speakerphone Outgoing Signal
Speakerphone Incoming Signal
DTMF Signal
LED CONTROLLER
IC1
SPEAKERPHONE IC
OPTION
Function
Open
Short
% Break
61%
67%
Redial Time
Dial Speed
10 pps
20 pps
0 ....SHORT1 .... OPEN

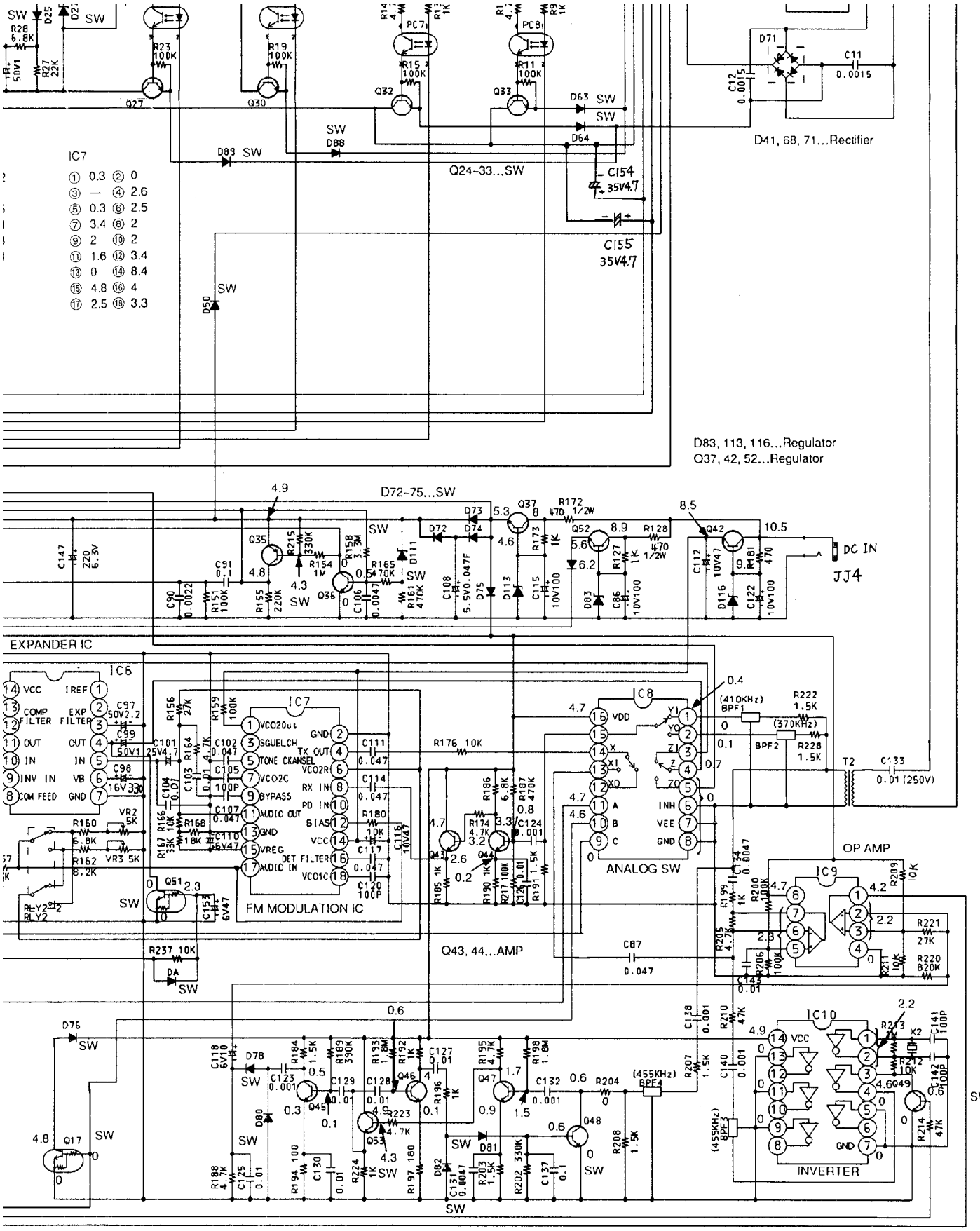
# SCHEMATIC DIAGRAM




Buzzer
RINGER IC
IC5
Rectifier
Protector
Handset Incoming Signal
RLY1
JJ1
JJ2
JJ4
DC IN
D41, 68, 71...Rectifier
Q24~33...SW
D72~75...SW
D83, 113, 116...Regulator
Q37, 42, 52...Regulator
EXPANDER IC
IC6
IC7
IC8
IC7
① 0.3 ② 0
③ — ④ 2.6
⑤ 0.3 ⑥ 2.5
⑦ 3.4 ⑧ 2
⑨ 2 ⑩ 2
⑪ 1.6 ⑫ 3.4
⑬ 0 ⑭ 8.4
⑮ 4.8 ⑯ 4
⑰ 2.5 ⑱ 3.3


Incoming Signal
Function
Open
Short
A % Break
61%
67%
C Redial Time
D
H Dial Speed
10 pps
20 pps
0 ....SHORT1 .... OPEN
DTMF Signal
SW
LED CONTROLLER
CPU IC4
IC12
IC11
VCC
TEST
OSC1
OSC2
RESET 0
GND
ICM Side tone
LATCH1
LATCH2
DATA OUT
CONF
L1 GRN
L2 RED
L2 GRN
ICM RED
ICM GRN
ON/OFF
MUTE
LED


OP AMP
IC2
IC6
IC7
EXPANDER IC
OPTIONS
EX-OR IC
SW
ON/OFF
PAUSE
MUTE
FLASH
REDIAL
RING L1
RING L2
RING ICM
HOOK
VOL (+)
VOL (-)
SP VOL1
SP VOL2
SP VOL3
SP VOL4
H/S VOL1
H/S VOL2
MC MUTE
SP MUTE
L2 HOLD
SCK
SO
TONE
BEEP
RING H/L
OUT
TR
B-U2
SP/HS
ICM RX Mute
NOTE: SW=Switching




NOTE: SW=Switching

# BLOCK DIAGRAM

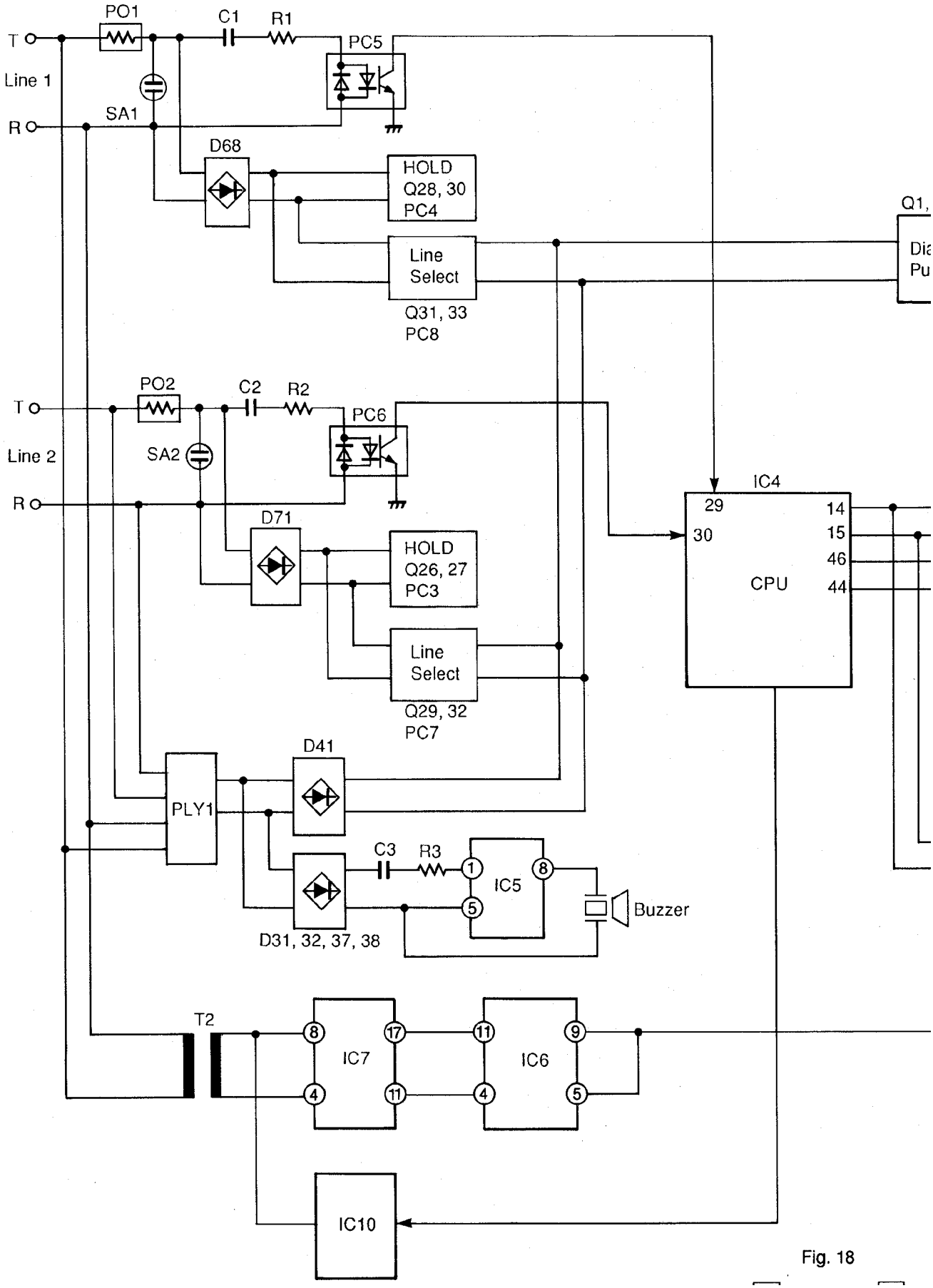



Fig. 18

# OCK DIAGRAM

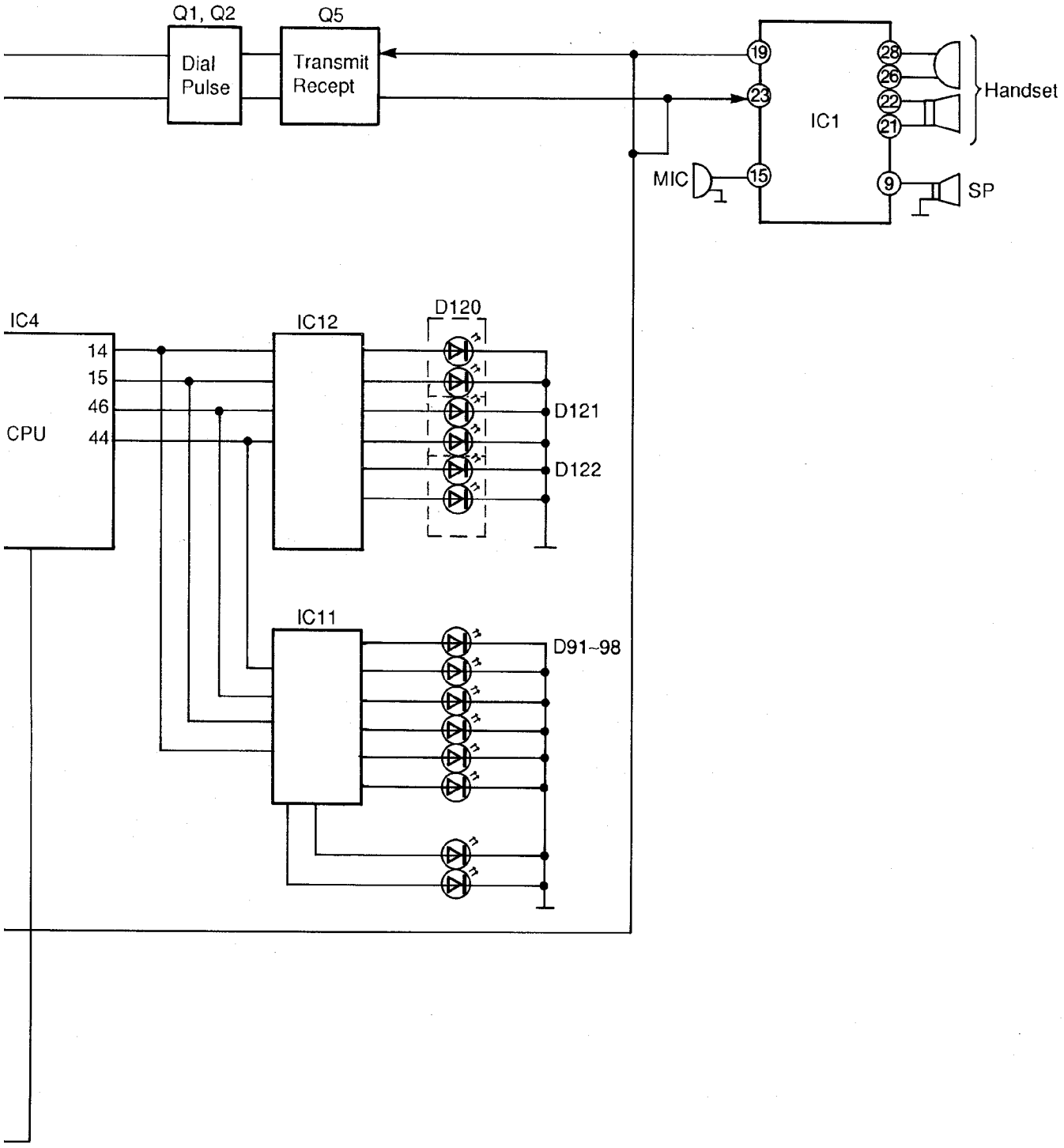



Fig. 18

# CABINET & ELECTRICAL PARTS LOCATION

ACTUAL SIZE OF SCREW

| Part No. | Figure |
|---|---|
| XTW3+W6P | |
| XTW26+10E | |
| XTW3+S14P | |
| XTW3+S8M | |

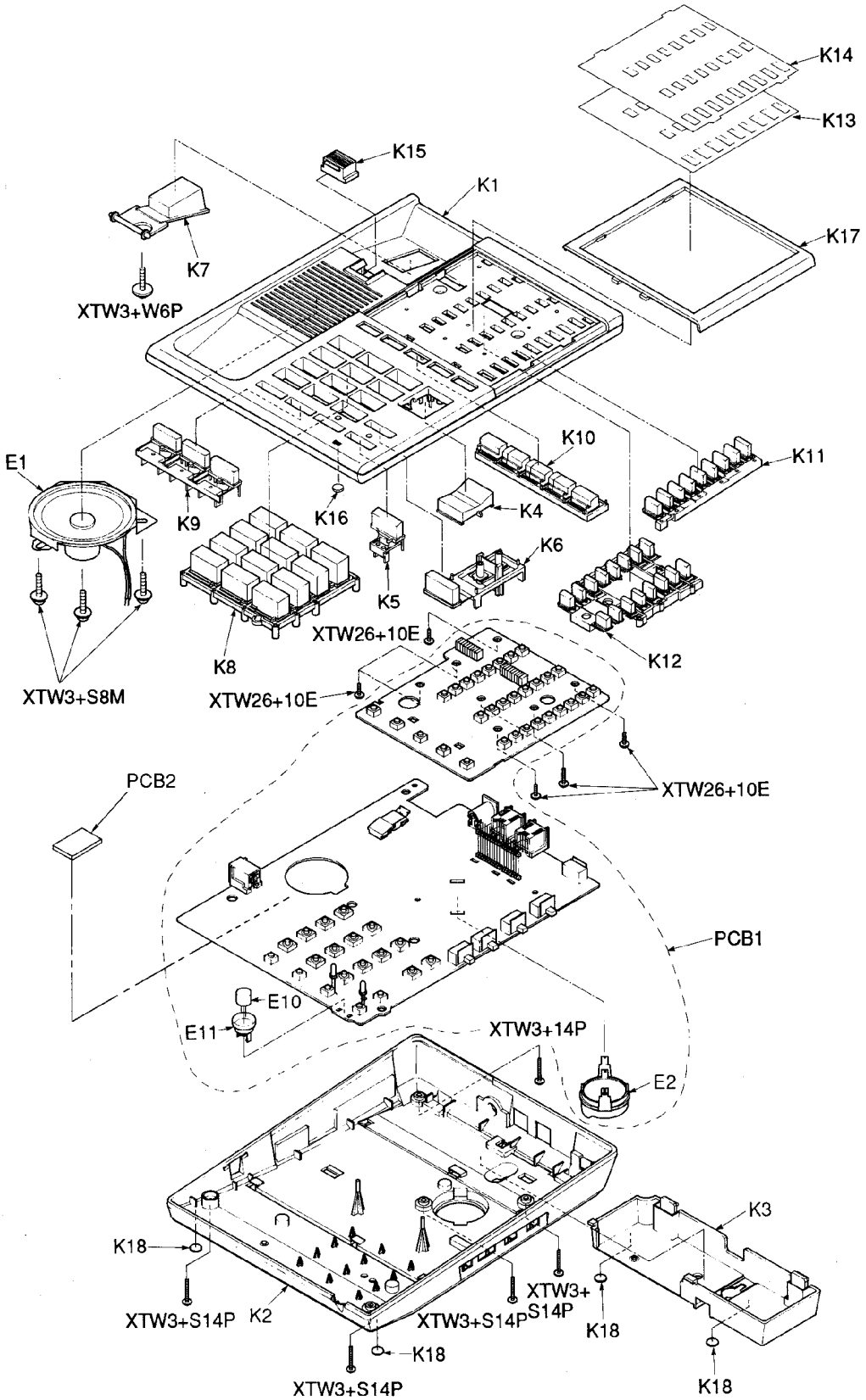



Fig. 19

# ACCESSORIES & PACKING MATERIALS

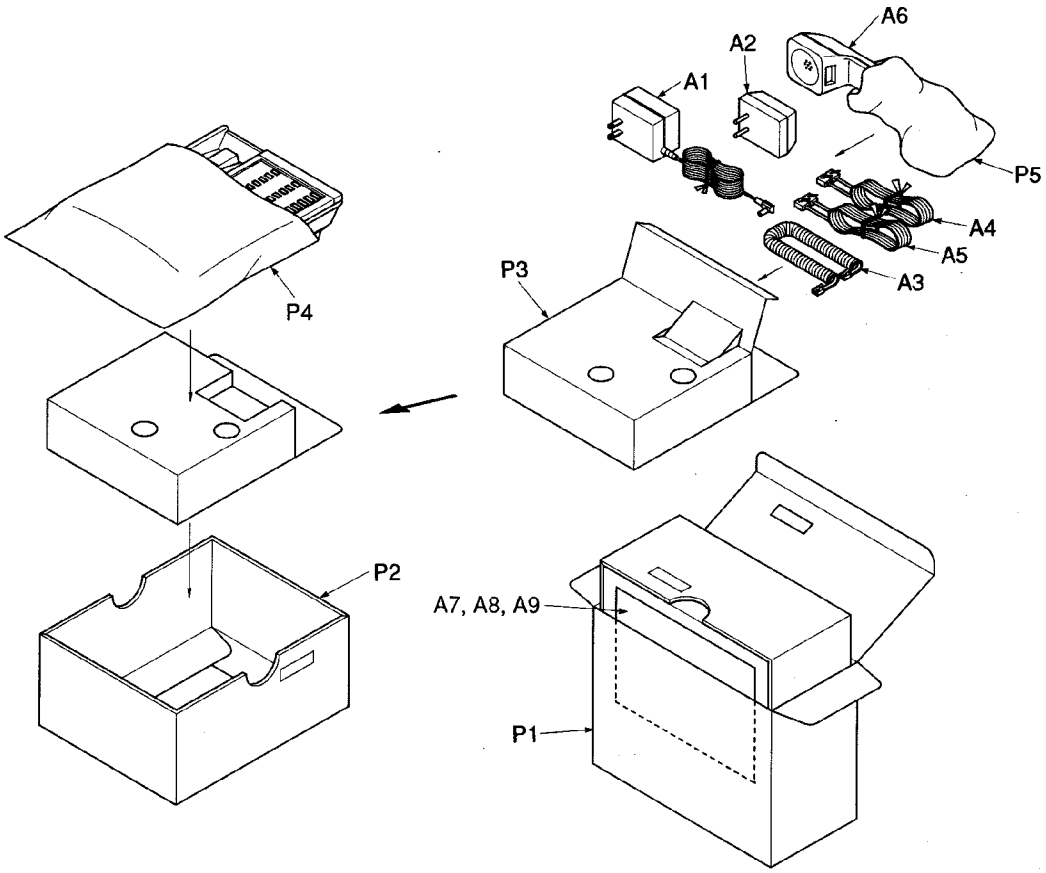



Fig. 20

# EXTENSION CABLE CONNECTING METHOD

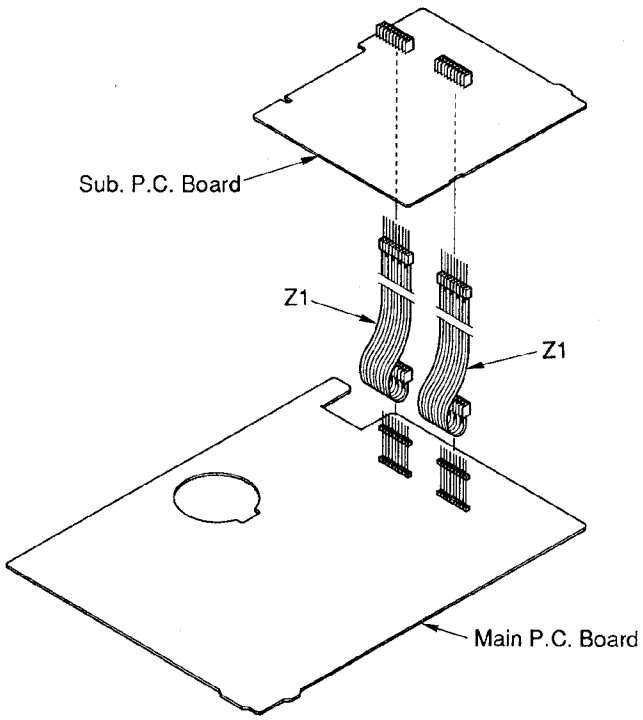



Fig. 21

**This replacement parts list is KX-T3281BX only.**

# REPLACEMENT PARTS LIST

Model KX-T3281BX

Notes:

1. RTL (Retention Time Limited)
   The marking (RTL) indicates that the Retention Time is limited for this item.
   After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. Important safety notice.
   Components identified by the ⚠ mark special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
3. The S mark indicates service standard parts and may differ from production parts.
4. RESISTORS & CAPACITORS
   Unless otherwise specified.
   All resistors are in ohms ( Ω ) K=1000Ω, M=1000KΩ
   All capacitors are in MICRO FARADS ( μF ) P= μμF
   *Type &Wattage of Resistor
   Type

| | | |
|---|---|---|
| ERC:Solid | ERX:Metal Film | PQ4R:Carbon |
| ERD:Carbon | ERG:Metal Oxide | ERS:Fusible Resistor |
| PQRD:Carbon | ER0:Metal Film | ERF:Cement Resistor |

   Wattage

| | | | | | |
|---|---|---|---|---|---|
| 10,16:1/8W | 14,25:1/4W | 12:1/2W | 1:1W | 2:2W | 3:3W |

   *Type & Voltage of Capacitor
   Type

| | |
|---|---|
| ECFD:Semi-Conductor | ECCD,ECKD,ECBT,PQCBC : Ceramic |
| ECQS:Styrol | ECQE,ECQV,ECQG : Polyester |
| PQCUV:Chip | ECEA,ECSZ : Electrolytic |
| ECQMS:Mica | ECQP : Polypropylene |

   Voltage

| ECQ Type | ECQG ECQV Type | ECSZ Type | Others | |
|---|---|---|---|---|
| 1H: 50V | 05: 50V | 0F:3.15V | 0J :6.3V | 1V :35V |
| 2A:100V | 1:100V | 1A:10V | 1A :10V | 50,1H:50V |
| 2E:250V | 2:200V | 1V:35V | 1C :16V | 1J :63V |
| 2H:500V | | 0J:6.3V | 1E,25:25V | 2A :100V |

| Ref. No. | Part No. | Part Name & Description | Pcs |
|---|---|---|---|
| | | CABINET AND ELECTRICAL PARTS | |
| K1 | PQKM10065Z1 | UPPER CABINET | 1 |
| K2 | PQKF10054Y1 | LOWER CABINET | 1 |
| K3 | PQKL10005Y1 | STAND | 1 |
| K4 | PQBC10015Z1 | BUTTON, VOLUME | 1 |
| K5 | PQBC10051Z1 | BUTTON, SP-PHONE | 1 |
| K6 | PQBC10052Z1 | BUTTON, REDIAL | 1 |
| K7 | PQBE44Z1 | BUTTON, HOOK | 1 |
| K8 | PQBX10067Z1 | BUTTON, DIAL | 1 |
| K9 | PQBX10070Z1 | BUTTON, PAUSE/FLASH/MUTE | 1 |
| K10 | PQBX10110Z1 | BUTTON, LINE SELECT | 1 |
| K11 | PQBX10114Z1 | BUTTON, 9 DIALER | 1 |
| K12 | PQBX10115Z1 | BUTTON, 16 DIALER | 1 |
| K13 | PQGD10067Z1 | TEL. NO. CARD | 1 |
| K14 | PQGV10014Z1 | TRANSPARENT PLATE | 1 |
| K15 | PQKE46X2 | HANDSET HANGER | 1 |
| K16 | PQHG10066Z | MIC SPACER | 1 |
| K17 | PQGG10023Z1 | GRILLE | 1 |
| K18 | PQHG316Z | RUBBER LEG | 4 |
| E 1 | PQAS65P06V | SPEAKER | 1 |

| Ref. No. | Part No. | Part Name & Description | Pcs |
|---|---|---|---|
| | | ACCESSORIES | |
| A1 | KX-A09BMX | AC ADAPTOR | 1 ⚠ |
| A2 | KX-J05X | SUPPORT PLUG | 1 |
| A3 | PQJA212M | HANDSET CORD | 1 |
| A4 | PQJA48W | TELEPHONE CORD (4 WIRES) | 1 |
| A5 | PQJA59V | TELEPHONE CORD (2 WIRES) S | 1 |
| A6 | PQJX2PS413Y | HANDSET ASS'Y | 1 |
| A7 | PQQW10381Z | QUICK REFERENCE GUIDE (for English) | 1 |
| A8 | PQQW10428Z | QUICK REFERENCE GUIDE (for Spanish) | 1 |
| A9 | PQQX10371Z | INSTRUCTION BOOK | 1 |
| | | PACKING MATERIALS | |
| P1 | PQPK10336Z | GIFT BOX | 1 |
| P2 | PQPN10142Z | CUSHION | 1 |
| P3 | PQPN10168Z | ACCESSORY BOX | 1 |
| P4 | XZB26X40A01 | PROTECTION COVER (for Unit) | 1 |
| P5 | PQPH75Z | PROTECTION COVER (for Handset) | 1 |
| | | FIXTURES AND TOOLS | |
| Z1 | PQZZ9K5Z | EXTENSION CORD, 9 PIN | 2 |

**Note:**
1. PQZZ9K5Z is useful for servicing. (They make servicing easy.)

| | | | |
|---|---|---|---|
| | | MAIN P. C. BOARD PARTS | |
| PCB1 | PQWPT3281BX | MAIN P. C. BOARD ASSEMBLY (RTL) | 1 ⚠ |
| | | (ICS) | |
| IC1 | PQVISC79101S | IC | 1 |
| IC2 | PQVINJM2904F | IC | 1 |
| IC4 | PQVI4639A15F | IC | 1 |
| IC5 | PQVIBA8206F | IC | 1 |
| IC6 | PQVIMC33110D | IC | 1 |
| IC7 | PQVIBA1602L | IC | 1 |
| IC8 | PQVITC4053BF | IC | 1 |
| IC9 | PQVINJM082BM | IC | 1 |
| IC10 | PQVITC4069UBF | IC | 1 |
| IC11 | PQVIMC4094BF | IC | 1 |
| IC12 | PQVIMC4094BF | IC | 1 |
| | | (TRANSISTORS) | |
| Q1 | 2SA1626 | TRANSISTOR(SI) (or 2SA1627) | 1 ⚠ |
| Q2 | PQVT2N6517CA | TRANSISTOR(SI) (or 2SD2260) | 1 ⚠ |
| Q3 | 2SB1218A | TRANSISTOR(SI) (or 2SA1576S) | 1 |
| Q4 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |
| Q5 | 2SC2120 | TRANSISTOR(SI) S | 1 |
| Q6 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |
| Q7 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |
| Q8 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |
| Q9 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |
| Q10 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |
| Q11 | 2SK1398 | TRANSISTOR(SI) | 1 |
| Q13 | UN5113 | TRANSISTOR(SI) S | 1 |
| Q15 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |
| Q16 | UN521 | TRANSISTOR(SI) S | 1 |
| Q17 | UN521 | TRANSISTOR(SI) S | 1 |
| Q22 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | 1 |

**This replacement parts list is KX-T3281BX only.**

| Ref. No. | Part No. | Part Name & Description | | Pcs |
|---|---|---|---|---|
| Q23 | 2SC2120 | TRANSISTOR(SI) | S | 1 |
| Q24 | 2SC2120 | TRANSISTOR(SI) | S | 1 |
| Q25 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q26 | 2SA1626 | TRANSISTOR(SI) (or 2SA1627) | | 1 |
| Q27 | 2SC3631 | TRANSISTOR(SI) (or 2SC3632) | | 1 |
| Q28 | 2SA1626 | TRANSISTOR(SI) (or 2SA1627) | | 1 |
| Q29 | 2SA1626 | TRANSISTOR(SI) (or 2SA1627) | | 1 |
| Q30 | 2SC3631 | TRANSISTOR(SI) (or 2SC3632) | | 1 |
| Q31 | 2SA1626 | TRANSISTOR(SI) (or 2SA1627) | | 1 |
| Q32 | 2SC3631 | TRANSISTOR(SI) (or 2SC3632) | | 1 |
| Q33 | 2SC3631 | TRANSISTOR(SI) (or 2SC3632) | | 1 |
| Q35 | 2SB1218A | TRANSISTOR(SI) (or 2SA1576S) | | 1 |
| Q36 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q37 | 2SC2235 | TRANSISTOR(SI) | | 1 |
| Q42 | 2SC2235 | TRANSISTOR(SI) | | 1 |
| Q43 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q44 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q45 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q46 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q47 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q48 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q49 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q50 | UN5213 | TRANSISTOR(SI) | S | 1 |
| Q51 | UN5213 | TRANSISTOR(SI) | S | 1 |
| Q52 | 2SC2235 | TRANSISTOR(SI) | | 1 |
| Q53 | 2SD1819A | TRANSISTOR(SI) (or 2SC4081S) | | 1 |
| Q54 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q55 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q56 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q57 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q58 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q59 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q60 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q61 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q62 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q63 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q64 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q65 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q66 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q67 | PQVTDTA114YU | TRANSISTOR(SI) | | 1 |
| Q68 | UN5213 | TRANSISTOR(SI) | S | 1 |
| | | (DIODES) | | |
| D1 | MA4047 | DIODE(SI) | | 1 |
| D2 | MA4180 | DIODE(SI) | | 1 ⚠ |
| D6 | PQVDMZJ5R1C | DIODE(SI) | | 1 |
| D7 | 1SS131 | DIODE(SI) | | 1 |
| D8 | 1SS131 | DIODE(SI) | | 1 |
| D9 | 1SS131 | DIODE(SI) | | 1 |
| D10 | MA161 | DIODE(SI) | | 1 |
| D11 | 1SS131 | DIODE(SI) | | 1 |
| D12 | 1SS131 | DIODE(SI) | | 1 |
| D14 | 1SS131 | DIODE(SI) | | 1 |
| D15 | 1SS131 | DIODE(SI) | | 1 |
| D16 | 1SS131 | DIODE(SI) | | 1 |
| D21 | 1SS131 | DIODE(SI) | | 1 |
| D22 | 1SS131 | DIODE(SI) | | 1 |
| D23 | 1SS131 | DIODE(SI) | | 1 |
| D24 | MA161 | DIODE(SI) | | 1 |
| D25 | 1SS131 | DIODE(SI) | | 1 |
| D26 | MA4062 | DIODE(SI) | | 1 |
| D27 | MA4062 | DIODE(SI) | | 1 |
| D28 | 1SS131 | DIODE(SI) | | 1 |
| D29 | 1SS131 | DIODE(SI) | | 1 |
| D30 | MA4360 | DIODE(SI) | | 1 |
| D31 | 1SS131 | DIODE(SI) | | 1 |
| D32 | 1SS131 | DIODE(SI) | | 1 |

| Ref. No. | Part No. | Part Name & Description | Pcs |
|---|---|---|---|
| D34 | 1SS131 | DIODE(SI) | 1 |
| D35 | 1SS131 | DIODE(SI) | 1 |
| D36 | 1SS131 | DIODE(SI) | 1 |
| D37 | 1SS131 | DIODE(SI) | 1 |
| D38 | 1SS131 | DIODE(SI) | 1 |
| D39 | PQVDS5688G | DIODE(SI) | 1 |
| D40 | PQVDS5688G | DIODE(SI) | 1 |
| D41 | PQVDS1YB40F1 | DIODE(SI) | 1 |
| D42 | 1SS131 | DIODE(SI) | 1 |
| D43 | MA161 | DIODE(SI) | 1 |
| D44 | 1SS131 | DIODE(SI) | 1 |
| D45 | 1SS131 | DIODE(SI) | 1 |
| D47 | 1SS131 | DIODE(SI) | 1 |
| D50 | 1SS131 | DIODE(SI) | 1 |
| D54 | 1SS131 | DIODE(SI) | 1 |
| D55 | 1SS131 | DIODE(SI) | 1 |
| D63 | PQVDS5688G | DIODE(SI) | 1 |
| D64 | PQVDS5688G | DIODE(SI) | 1 |
| D68 | PQVDS1YB40F1 | DIODE(SI) | 1 |
| D71 | PQVDS1YB40F1 | DIODE(SI) | 1 |
| D72 | 1SS131 | DIODE(SI) | 1 |
| D73 | 1SS131 | DIODE(SI) | 1 |
| D74 | 1SS131 | DIODE(SI) | 1 |
| D75 | 1SS131 | DIODE(SI) | 1 |
| D76 | 1SS131 | DIODE(SI) | 1 |
| D78 | 1SS131 | DIODE(SI) | 1 |
| D80 | 1SS131 | DIODE(SI) | 1 |
| D81 | 1SS131 | DIODE(SI) | 1 |
| D82 | 1SS131 | DIODE(SI) | 1 |
| D83 | MA4062 | DIODE(SI) | 1 |
| D84 | 1SS131 | DIODE(SI) | 1 |
| D85 | 1SS131 | DIODE(SI) | 1 |
| D86 | 1SS131 | DIODE(SI) | 1 |
| D87 | 1SS131 | DIODE(SI) | 1 |
| D88 | PQVDS5688G | DIODE(SI) | 1 |
| D89 | PQVDS5688G | DIODE(SI) | 1 |
| D91 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D92 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D93 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D94 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D95 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D96 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D97 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D98 | PQVDSLN210V1 | DIODE(SI) | 1 |
| D99 | LN28RPL | LED | 1 |
| D100 | LN28RPL | DIODE(SI) | 1 |
| D101 | MA161 | DIODE(SI) | 1 |
| D102 | MA161 | DIODE(SI) | 1 |
| D103 | MA161 | DIODE(SI) | 1 |
| D104 | MA161 | DIODE(SI) | 1 |
| D105 | MA161 | DIODE(SI) | 1 |
| D106 | MA161 | DIODE(SI) | 1 |
| D107 | 1SS131 | DIODE(SI) | 1 |
| D108 | 1SS131 | DIODE(SI) | 1 |
| D111 | PQVDHZ3BLL | DIODE(SI) | 1 |
| D113 | MA4062 | DIODE(SI) | 1 |
| D116 | MA4091 | DIODE(SI) | 1 |
| D120 | LN02102C13LF | LED | 1 |
| D121 | LN02102C13LF | LED | 1 |
| D122 | LN02102C13LF | LED | 1 |
| DA | RLS71 | DIODE(SI) | 1 |
| | | (JACKS) | |
| JJ1 | PQJJ1TB26Z | JACK, TELEPHONE LINE (for 4 WIRES) | 1 |
| JJ2 | PQJJ1TA15Z | JACK, TELEPHONE LINE (for 2 WIRES) | 1 |
| JJ3 | PQJJ1TB18Z | JACK, HANDSET | 1 |
| JJ4 | PQJJ1B4Y | JACK, DC IN | 1 |

**This replacement parts list is KX-T3281BX only.**

| Ref. No. | Part No. | Part Name & Description | | Pcs |
|---|---|---|---|---|
| | | (SWITCHES) | | |
| S1 | EVQ22405K | SWITCH, PAGE | | 1 |
| S2 | EVQ22405K | SWITCH, M13 | | 1 |
| S3 | EVQ22405K | SWITCH, M14 | | 1 |
| S6 | EVQ22405K | SWITCH, INTERCOM | | 1 |
| S7 | EVQ22405K | SWITCH, M9 | | 1 |
| S8 | EVQ22405K | SWITCH, M10 | | 1 |
| S9 | EVQ22405K | SWITCH, M11 | | 1 |
| S10 | EVQ22405K | SWITCH, M12 | | 1 |
| S11 | EVQ22405K | SWITCH, PROGRAM | | 1 |
| S12 | EVQ22405K | SWITCH, HOLD | | 1 |
| S13 | EVQ22405K | SWITCH, M5 | | 1 |
| S14 | EVQ22405K | SWITCH, M6 | | 1 |
| S15 | EVQ22405K | SWITCH, M7 | | 1 |
| S16 | EVQ22405K | SWITCH, M8 | | 1 |
| S17 | EVQ22405K | SWITCH, LINE1 | | 1 |
| S18 | EVQ22405K | SWITCH, M1 | | 1 |
| S19 | EVQ22405K | SWITCH, M2 | | 1 |
| S20 | EVQ22405K | SWITCH, M3 | | 1 |
| S21 | EVQ22405K | SWITCH, M4 | | 1 |
| S22 | EVQ22405K | SWITCH, LINE2 | | 1 |
| S23 | EVQ22405K | SWITCH, EXT. 1 | | 1 |
| S24 | EVQ22405K | SWITCH, EXT. 2 | | 1 |
| S25 | EVQ22405K | SWITCH, EXT. 3 | | 1 |
| S26 | EVQ22405K | SWITCH, EXT. 4 | | 1 |
| S27 | EVQ22405K | SWITCH, EXT. 5 | | 1 |
| S28 | EVQ22405K | SWITCH, EXT. 6 | | 1 |
| S29 | EVQ22405K | SWITCH, EXT. 7 | | 1 |
| S30 | EVQ22405K | SWITCH, EXT. 8 | | 1 |
| S31 | EVQQJJ05Q | SWITCH, * | | 1 |
| S32 | EVQQJJ05Q | SWITCH, 0 | | 1 |
| S33 | EVQQJJ05Q | SWITCH, # | | 1 |
| S34 | EVQQJJ05Q | SWITCH, 7 | | 1 |
| S35 | EVQQJJ05Q | SWITCH, 8 | | 1 |
| S36 | EVQQJJ05Q | SWITCH, 9 | | 1 |
| S37 | EVQQJJ05Q | SWITCH, 4 | | 1 |
| S38 | EVQQJJ05Q | SWITCH, 5 | | 1 |
| S39 | EVQQJJ05Q | SWITCH, 6 | | 1 |
| S40 | EVQQJJ05Q | SWITCH, 1 | | 1 |
| S41 | EVQQJJ05Q | SWITCH, 2 | | 1 |
| S42 | EVQQJJ05Q | SWITCH, 3 | | 1 |
| S43 | PQSS3A17W | SWITCH, RING L1 | | 1 |
| S44 | PQSS3A17W | SWITCH, RING L2 | | 1 |
| S45 | PQSS3A17W | SWITCH, RING ICM | | 1 |
| S46 | EVQQJJ05Q | SWITCH, VOL. (+) | | 1 |
| S47 | EVQQJJ05Q | SWITCH, VOL. (-) | | 1 |
| S48 | PQSS2A27W | SWITCH, T/P | | 1 |
| S50 | ESE14A211 | SWITCH, HOOK | | 1 |
| S52 | PQSS2B18W | SWITCH, POWER FAILURE LINE | | 1 |
| S57 | EVQ22405K | SWITCH, LOWER | | 1 |
| S58 | EVQ22405K | SWITCH, CONF | | 1 |
| S59 | EVQ22405K | SWITCH, SP-PHONE | | 1 |
| S60 | EVQ22405K | SWITCH, MUTE | | 1 |
| S61 | EVQ22405K | SWITCH, FLASH | | 1 |
| S62 | EVQ22405K | SWITCH, REDIAL | | 1 |
| S63 | EVQ22405K | SWITCH, PAUSE | | 1 |
| | | (PHOTO ELECTRIC TRANSDUCERS) | | |
| PC1 | PQVIPC817K | PHOTO COUPLER | S | 1 ⚠ |
| PC2 | PQVIPC817K | PHOTO COUPLER | S | 1 ⚠ |
| PC3 | PQVIPC851K | PHOTO COUPLER | S | 1 ⚠ |
| PC4 | PQVIPC851K | PHOTO COUPLER | S | 1 ⚠ |
| PC5 | PQVIPC814K | PHOTO COUPLER | S | 1 ⚠ |
| PC6 | PQVIPC814K | PHOTO COUPLER | S | 1 ⚠ |
| PC7 | PQVIPC851K | PHOTO COUPLER | S | 1 ⚠ |
| PC8 | PQVIPC851K | PHOTO COUPLER | S | 1 ⚠ |

| Ref. No. | Part No. | Part Name & Description | | Pcs |
|---|---|---|---|---|
| | | (CONNECTORS) | | |
| CN1 | PQJP09A40Z | CONNECTOR, 9 PIN | | 1 |
| CN2 | PQJP09A40Z | CONNECTOR, 9 PIN | | 1 |
| CN3 | PQJS9X49Z | CONNECTOR SOCKET, 9 PIN | | 1 |
| CN4 | PQJS9X49Z | CONNECTOR SOCKET, 9 PIN | | 1 |
| | | (OTHERS) | | |
| RLY1 | PQSL58Z | RELAY | S | 1 |
| RLY2 | PQSL58Z | RELAY | S | 1 |
| SA1 | PQVDRA311PT2 | VARISTOR (SURGE ABSORBER) | | 1 ⚠ |
| SA2 | PQVDRA311PT2 | VARISTOR (SURGE ABSORBER) | | 1 ⚠ |
| T2 | PQLE131 | COIL | | 1 |
| VR2 | EVNDXAA03B53 | SEMI-FIXED RESISTOR, 5KΩ (B) | | 1 |
| VR3 | EVNDXAA03B53 | SEMI-FIXED RESISTOR, 5KΩ (B) | | 1 |
| X1 | PQVBT4.0G2 | CERAMIC FILTER | | 1 |
| X2 | PQVBB455E | CERAMIC FILTER | | 1 |
| X3 | PQVCL3276N9Z | CRYSTAL OSCILLATOR | | 1 |
| L3 | ELEV101KA | COIL | | 1 ⚠ |
| BPF1 | PQVFCFW410D1 | CERAMIC FILTER | | 1 |
| BPF2 | PQVFCFW370D1 | CERAMIC FILTER | | 1 |
| BPF3 | PQVFKB455M15 | CERAMIC FILTER | | 1 |
| BPF4 | PQVFCFW455E | CERAMIC FILTER | | 1 |
| E2 | PQWHT3185M | BUZZER ASSEMBLY | | 1 |
| E10 | PQJM120Z | MICROPHONE | | 1 |
| E11 | PQHR10112Z | MICROPHONE CASE | | 1 |
| | | (RESISTORS) | | |
| R1 | PQ4R10XJ473 | 47K | | 1 |
| R2 | PQ4R10XJ473 | 47K | | 1 |
| R3 | ERDS1TJ682 | 6.8K | | 1 |
| R4 | PQ4R10XJ682 | 6.8K | | 1 |
| R5 | PQ4R10XJ334 | 330K | | 1 |
| R6 | PQ4R10XJ471 | 470 | | 1 |
| R7 | PQ4R10XJ823 | 82K | | 1 |
| R8 | PQ4R10XJ104 | 100K | | 1 |
| R9 | PQ4R10XJ102 | 1K | | 1 |
| R10 | PQ4R10XJ472 | 4.7K | | 1 |
| R11 | PQ4R10XJ104 | 100K | | 1 |
| R12 | PQ4R10XJ104 | 100K | | 1 |
| R13 | PQ4R10XJ102 | 1K | | 1 |
| R14 | PQ4R10XJ472 | 4.7K | | 1 |
| R15 | PQ4R10XJ104 | 100K | | 1 |
| R16 | PQ4R10XJ104 | 100K | | 1 |
| R17 | PQ4R10XJ102 | 1K | | 1 |
| R18 | PQ4R10XJ472 | 4.7K | | 1 |
| R19 | PQ4R10XJ104 | 100K | | 1 |
| R20 | PQ4R10XJ104 | 100K | | 1 |
| R21 | PQ4R10XJ102 | 1K | | 1 |
| R22 | PQ4R10XJ472 | 4.7K | | 1 |
| R23 | PQ4R10XJ104 | 100K | | 1 |
| R24 | PQ4R10XJ101 | 100 | | 1 |
| R25 | PQ4R10XJ273 | 27K | | 1 |
| R26 | PQ4R18XJ104 | 100K | | 1 |
| R27 | PQ4R10XJ223 | 22K | | 1 |
| R28 | PQ4R10XJ682 | 6.8K | | 1 |
| R29 | PQ4R18XJ102 | 1K | | 1 |
| R30 | PQ4R10XJ101 | 100 | | 1 |
| R31 | PQ4R10XJ273 | 27K | | 1 |
| R32 | PQ4R10XJ104 | 100K | | 1 |
| R33 | PQ4R10XJ223 | 22K | | 1 |
| R34 | PQ4R18XJ682 | 6.8K | | 1 |
| R35 | PQ4R10XJ102 | 1K | | 1 |

**This replacement parts list is KX-T3281BX only.**

| Ref. No. | Part No. | Value | Pcs |
|---|---|---|---|
| R36 | ERDS2TJ825 | 8.2M | 1 |
| R37 | Not Used | | |
| R38 | PQ4R10XJ104 | 100K | 1 |
| R39 | PQ4R10XJ683 | 68K | 1 |
| R40 | PQ4R10XJ104 | 100K | 1 |
| R41 | PQ4R10XJ472 | 4.7K | 1 |
| R42 | PQ4R18XJ100 | 10 | 1 ⚠ |
| R43 | PQ4R10XJ101 | 100 | 1 |
| R44 | PQ4R10XJ472 | 4.7K | 1 |
| R45 | PQ4R10XJ472 | 4.7K | 1 |
| R46 | ERDS1TJ101 | 100 | 1 |
| R47 | PQ4R10XJ472 | 4.7K | 1 |
| R48 | PQ4R10XJ102 | 1K | 1 |
| R49 | PQ4R10XJ562 | 5.6K | 1 |
| R50 | PQ4R10XJ562 | 5.6K | 1 |
| R51 | PQ4R10XJ4R7 | 4.7 | 1 |
| R52 | PQ4R18XJ153 | 15K | 1 |
| R53 | PQ4R10XJ393 | 39K | 1 |
| R54 | PQ4R10XJ150 | 15 | 1 |
| R55 | PQ4R10XJ223 | 22K | 1 |
| R56 | PQ4R10XJ563 | 56K | 1 |
| R57 | PQ4R10XJ563 | 56K | 1 |
| R58 | PQ4R10XJ473 | 47K | 1 |
| R59 | PQ4R10XJ223 | 22K | 1 |
| R60 | PQ4R18XJ562 | 5.6K | 1 |
| R61 | PQ4R10XJ104 | 100K | 1 |
| R62 | ERDS1TJ152 | 1.5K | 1 |
| R63 | PQ4R10XJ222 | 2.2K | 1 |
| R64 | PQ4R18XJ102 | 1K | 1 |
| R65 | PQ4R10XJ822 | 8.2K | 1 |
| R66 | PQ4R10XJ681 | 680 | 1 |
| R67 | PQ4R10XJ273 | 27K | 1 |
| R68 | PQ4R10XJ103 | 10K | 1 |
| R69 | PQ4R10XJ472 | 4.7K | 1 |
| R70 | PQ4R10XJ563 | 56K | 1 |
| R71 | PQ4R18XJ223 | 22K | 1 |
| R72 | PQ4R10XJ334 | 330K | 1 |
| R73 | PQ4R10XJ393 | 39K | 1 |
| R74 | PQ4R10XJ473 | 47K | 1 |
| R75 | PQ4R10XJ273 | 27K | 1 |
| R76 | PQ4R18XJ392 | 3.9K | 1 |
| R77 | PQ4R10XJ472 | 4.7K | 1 |
| R78 | PQ4R18XJ223 | 22K | 1 |
| R79 | PQ4R10XJ181 | 180 | 1 |
| R80 | PQ4R10XJ473 | 47K | 1 |
| R81 | PQ4R10XJ101 | 100 | 1 |
| R82 | PQ4R10XJ393 | 39K | 1 |
| R83 | PQ4R10XJ273 | 27K | 1 |
| R84 | PQ4R10XJ473 | 47K | 1 |
| R85 | PQ4R18XJ823 | 82K | 1 |
| R86 | PQ4R10XJ473 | 47K | 1 |
| R87 | PQ4R10XJ473 | 47K | 1 |
| R88 | PQ4R10XJ683 | 68K | 1 |
| R89 | PQ4R10XJ473 | 47K | 1 |
| R90 | PQ4R10XJ473 | 47K | 1 |
| R91 | PQ4R18XJ823 | 82K | 1 |
| R92 | PQ4R10XJ473 | 47K | 1 |
| R93 | PQ4R10XJ473 | 47K | 1 |
| R94 | PQ4R18XJ105 | 1M | 1 |
| R95 | PQ4R10XJ103 | 10K | 1 |
| R96 | PQ4R10XJ394 | 390K | 1 |
| R97 | PQ4R10XJ183 | 18K | 1 |
| R98 | PQ4R10XJ562 | 5.6K | 1 |
| R99 | PQ4R10XJ472 | 4.7K | 1 |
| R100 | PQ4R10XJ103 | 10K | 1 |
| R101 | PQ4R10XJ682 | 6.8K | 1 |
| R102 | PQ4R10XJ124 | 120K | 1 |
| R103 | Not Used | | |
| R104 | Not Used | | |
| R105 | Not Used | | |
| R106 | Not Used | | |

| Ref. No. | Part No. | Value | Pcs |
|---|---|---|---|
| R107 | PQ4R10XJ563 | 56K | 1 |
| R108 | PQ4R10XJ224 | 220K | 1 |
| R109 | PQ4R10XJ154 | 150K | 1 |
| R110 | PQ4R10XJ153 | 15K | 1 |
| R111 | PQ4R10XJ334 | 330K | 1 |
| R112 | PQ4R10XJ105 | 1M | 1 |
| R113 | PQ4R10XJ153 | 15K | 1 |
| R114 | ERDS1TJ104 | 100K | 1 |
| R115 | PQ4R10XJ000 | 0 | 1 |
| R116 | PQ4R18XJ823 | 82K | 1 |
| R117 | PQ4R10XJ393 | 39K | 1 |
| R118 | PQ4R10XJ823 | 82K | 1 |
| R119 | PQ4R10XJ154 | 150K | 1 |
| R120 | PQ4R10XJ334 | 330K | 1 |
| R121 | PQ4R10XJ105 | 1M | 1 |
| R122 | PQ4R10XJ153 | 15K | 1 |
| R123 | PQ4R10XJ562 | 5.6K | 1 |
| R124 | PQ4R10XJ103 | 10K | 1 |
| R125 | PQ4R10XJ102 | 1K | 1 |
| R126 | PQ4R18XJ102 | 1K | 1 |
| R127 | PQ4R10XJ102 | 1K | 1 |
| R128 | ERDS1TJ470 | 47 | 1 |
| R129 | PQ4R10XJ473 | 47K | 1 |
| R130 | PQ4R10XJ473 | 47K | 1 |
| R131 | PQ4R10XJ103 | 10K | 1 |
| R132 | Not Used | | |
| R133 | Not Used | | |
| R134 | Not Used | | |
| R135 | Not Used | | |
| R136 | Not Used | | |
| R137 | Not Used | | |
| R138 | Not Used | | |
| R139 | Not Used | | |
| R140 | Not Used | | |
| R141 | Not Used | | |
| R142 | Not Used | | |
| R143 | Not Used | | |
| R144 | Not Used | | |
| R145 | Not Used | | |
| R146 | Not Used | | |
| R147 | Not Used | | |
| R148 | Not Used | | |
| R149 | PQ4R10XJ223 | 22K | 1 |
| R150 | PQ4R10XJ223 | 22K | 1 |
| R151 | PQ4R10XJ104 | 100K | 1 |
| R152 | Not Used | | |
| R153 | Not Used | | |
| R154 | PQ4R10XJ105 | 1M | 1 |
| R155 | PQ4R10XJ224 | 220K | 1 |
| R156 | PQ4R10XJ273 | 27K | 1 |
| R157 | PQ4R10XJ333 | 33K | 1 |
| R158 | PQ4R10XJ335 | 3.3M | 1 |
| R159 | PQ4R10XJ104 | 100K | 1 |
| R160 | PQ4R10XJ682 | 6.8K | 1 |
| R161 | PQ4R10XJ474 | 470K | 1 |
| R162 | PQ4R10XJ822 | 8.2K | 1 |
| R163 | Not Used | | |
| R164 | PQ4R10XJ472 | 4.7K | 1 |
| R165 | PQ4R10XJ474 | 470K | 1 |
| R166 | PQ4R10XJ103 | 10K | 1 |
| R167 | PQ4R10XJ333 | 33K | 1 |
| R168 | PQ4R10XJ183 | 18K | 1 |
| 1R69 | Not Used | | |
| R170 | Not Used | | |
| R171 | Not Used | | |
| R172 | ERDS1TJ470 | 47 | 1 |
| R173 | PQ4R18XJ102 | 1K | 1 |
| R174 | PQ4R10XJ472 | 4.7K | 1 |
| R175 | Not Used | | |
| R176 | PQ4R10XJ103 | 10K | 1 |
| R177 | Not Used | | |

**This replacement parts list is KX-T3281BX only.**

| Ref. No. | Part No. | Value | Pcs |
|---|---|---|---|
| R178 | Not Used | | |
| R179 | ERDS1TJ104 | 100K | 1 |
| R180 | PQ4R10XJ103 | 10K | 1 |
| R181 | PQ4R10XJ471 | 470 | 1 |
| R182 | Not Used | | |
| R183 | Not Used | | |
| R184 | PQ4R10XJ152 | 1.5K | 1 |
| R185 | PQ4R10XJ102 | 1K | 1 |
| R186 | PQ4R10XJ682 | 6.8K | 1 |
| R187 | PQ4R10XJ474 | 470K | 1 |
| R188 | PQ4R10XJ472 | 4.7K | 1 |
| R189 | PQ4R10XJ394 | 390K | 1 |
| R190 | PQ4R10XJ102 | 1K | 1 |
| R191 | PQ4R10XJ152 | 1.5K | 1 |
| R192 | PQ4R10XJ102 | 1K | 1 |
| R193 | PQ4R10XJ185 | 1.8M | 1 |
| R194 | PQ4R10XJ101 | 100 | 1 |
| R195 | PQ4R10XJ472 | 4.7K | 1 |
| R196 | PQ4R10XJ102 | 1K | 1 |
| R197 | PQ4R10XJ181 | 180 | 1 |
| R198 | PQ4R10XJ185 | 1.8M | 1 |
| R199 | PQ4R10XJ102 | 1K | 1 |
| R200 | PQ4R10XJ104 | 100K | 1 |
| R201 | Not Used | | |
| R202 | PQ4R10XJ334 | 330K | 1 |
| R203 | PQ4R10XJ152 | 1.5K | 1 |
| R204 | PQ4R10XJ000 | 0 | 1 |
| R205 | PQ4R10XJ472 | 4.7K | 1 |
| R206 | PQ4R10XJ104 | 100K | 1 |
| R207 | PQ4R10XJ152 | 1.5K | 1 |
| R208 | PQ4R10XJ152 | 1.5K | 1 |
| R209 | PQ4R10XJ103 | 10K | 1 |
| R210 | PQ4R10XJ473 | 47K | 1 |
| R211 | PQ4R10XJ103 | 10K | 1 |
| R212 | PQ4R10XJ103 | 10K | 1 |
| R213 | PQ4R10XJ105 | 1M | 1 |
| R214 | PQ4R18XJ473 | 47K | 1 |
| R215 | PQ4R10XJ334 | 330K | 1 |
| R216 | PQ4R10XJ473 | 47K | 1 |
| R217 | PQ4R10XJ104 | 100K | 1 |
| R218 | PQ4R10XJ123 | 12K | 1 |
| R219 | PQ4R18XJ123 | 12K | 1 |
| R220 | PQ4R10XJ824 | 820K | 1 |
| R221 | PQ4R10XJ273 | 27K | 1 |
| R222 | PQ4R10XJ152 | 1.5K | 1 |
| R223 | PQ4R10XJ472 | 4.7K | 1 |
| R224 | PQ4R10XJ102 | 1K | 1 |
| R225 | ERDS1TJ822 | 8.2K | 1 |
| R226 | PQ4R10XJ223 | 22K | 1 |
| R227 | PQ4R18XJ000 | 0 | 1 |
| R228 | PQ4R10XJ152 | 1.5K | 1 |
| R229 | Not Used | | |
| R230 | PQ4R10XJ272 | 2.7K | 1 |
| R231 | PQ4R10XJ272 | 2.7K | 1 |
| R232 | PQ4R10XJ334 | 330K | 1 |
| R233 | PQ4R10XJ102 | 1K | 1 |
| R234 | PQ4R10XJ103 | 10K | 1 |
| R235 | Not Used | | |
| R236 | PQ4R10XJ104 | 100K | 1 |
| R237 | PQ4R10XJ103 | 10K | 1 |
| R238 | | | |
| \| | Not Used | | |
| R258 | | | |
| R259 | PQ4R10XJ121 | 120 | 1 |
| R260 | PQ4R10XJ121 | 120 | 1 |
| R261 | PQ4R10XJ121 | 120 | 1 |
| R262 | PQ4R10XJ121 | 120 | 1 |
| R263 | PQ4R10XJ121 | 120 | 1 |
| R264 | PQ4R10XJ121 | 120 | 1 |
| R265 | PQ4R18XJ471 | 470 | 1 |
| R266 | PQ4R18XJ471 | 470 | 1 |

| Ref. No. | Part No. | Value | Pcs |
|---|---|---|---|
| R267 | PQ4R18XJ471 | 470 | 1 |
| R268 | PQ4R18XJ471 | 470 | 1 |
| R269 | PQ4R10XJ471 | 470 | 1 |
| R270 | PQ4R10XJ471 | 470 | 1 |
| R271 | PQ4R10XJ471 | 470 | 1 |
| R272 | PQ4R10XJ471 | 470 | 1 |
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| | | (CAPACITORS) | |
| C1 | ECQE2E224JZ | 0.22 | 1 |
| C2 | ECQE2E224JZ | 0.22 | 1 |
| C3 | ECQE2105KF | 1 | 1 |
| C4 | ECEA1HKS100 | 10 | 1 |
| C5 | ECEA1HKSR22 | 0.22 | 1 |
| C6 | ECQG1H682JZ | 0.0068 | 1 |
| C7 | ECKD2H681KB | 680P | 1 |
| C8 | ECKD2H681KB | 680P | 1 |
| C9 | ECKT2H152KB | 0.0015 | 1 |
| C10 | ECKT2H152KB | 0.0015 | 1 |
| C11 | ECKT2H152KB | 0.0015 | 1 |
| C12 | ECKT2H152KB | 0.0015 | 1 |
| C13 | PQCUV1E104MD | 0.1 | 1 |
| C14 | PQCUV1E104MD | 0.1 | 1 |
| C15 | PQCUV1E104MD | 0.1 | 1 |
| C16 | PQCUV1E104MD | 0.1 | 1 |
| C17 | ECEA1CKS100 | 10 | 1 |
| C18 | ECEA1CK101 | 100 | 1 |
| C19 | ECEA1HKS010 | 1 | 1 |
| C20 | ECEA1CKS100 | 10 | 1 |
| C21 | ECEA1CK101 | 100 | 1 |
| C22 | ECEA1HKS010 | 1 | 1 |
| C23 | PQCUV1E104MD | 0.1 | 1 |
| C24 | PQCUV1H103KB | 0.01 | 1 ⚠ |
| C25 | ECEA1CKS100 | 10 | 1 |
| C26 | ECEA1CKS100 | 10 | 1 |
| C27 | ECEA0JKS101 | 100 | 1 |
| C28 | PQCUV1E104MD | 0.1 | 1 |
| C29 | PQCUV1H561JC | 560P | 1 |
| C30 | PQCUV1H103KB | 0.01 | 1 |
| C31 | PQCUV1H822MD | 0.0082 | 1 |
| C32 | PQCUV1H682KB | 0.0068 | 1 |
| C33 | PQCUV1H223KB | 0.022 | 1 |
| C34 | ECEA0JKS470 | 47 | 1 |
| C35 | ECEA0JU102 | 1000 | 1 |
| C36 | ECEA1HKS010 | 1 | 1 |
| C37 | PQCUV1H821JC | 820P | 1 |
| C38 | ECEA0JK221 | 220 | 1 |
| C39 | PQCUV1E104MD | 0.1 | 1 |
| C40 | ECEA1HKS010 | 1 | 1 |
| C41 | ECEA1HKS010 | 1 | 1 |
| C42 | PQCUV1C224ZF | 0.22 | 1 |
| C43 | Not Used | | |
| C44 | ECEA1CKS100 | 10 | 1 |
| C45 | ECEA0JKS101 | 100 | 1 |
| C46 | PQCUV1H223KB | 0.022 | 1 |
| C47 | PQCUV1C683MD | 0.068 | 1 |
| C48 | PQCUV1H223KB | 0.022 | 1 |
| C49 | PQCUV1H392KB | 0.0039 | 1 |
| C50 | PQCUV1E104MD | 0.1 | 1 |
| C51 | Not Used | | |
| C52 | PQCUV1H223KB | 0.022 | 1 |
| C53 | PQCUV1H102J | 0.001 | 1 |
| C54 | ECEA1CKS100 | 10 | 1 |
| C55 | Not Used | | |
| C56 | PQCUV1H103KB | 0.01 | 1 |

**This replacement parts list is KX-T3281BX only.**

| Ref. No. | Part No. | Value | | Pcs |
|---|---|---|---|---|
| C57 | Not Used | | | |
| C58 | Not Used | | | |
| C59 | ECUV1H104MD | 0.1 | | 1 |
| C60 | PQCUV1H562KB | 0.0056 | | 1 |
| C61 | PQCUV1H272KB | 0.0027 | | 1 |
| C62 | ECEA1HKS010 | 1 | | 1 |
| C63 | ECEA1HKS010 | 1 | | 1 |
| C64 | PQCUV1H473MD | 0.047 | | 1 |
| C65 | Not Used | | | |
| C66 | ECEA0JKS101 | 100 | | 1 |
| C67 | PQCUV1H473MD | 0.047 | | 1 |
| C68 | PQCUV1H222KB | 0.0022 | | 1 |
| C69 | PQCUV1H473MD | 0.047 | | 1 |
| C70 | PQCUV1C224ZF | 0.22 | | 1 |
| C71 | Not Used | | | |
| C72 | Not Used | | | |
| C73 | Not Used | | | |
| C74 | Not Used | | | |
| C75 | Not Used | | | |
| C76 | PQCUV1E104MD | 0.1 | | 1 |
| C77 | PQCUV1E104MD | 0.1 | | 1 |
| C78 | PQCUV1E104MD | 0.1 | | 1 |
| C79 | PQCUV1H102J | 0.001 | | 1 |
| C80 | PQCUV1H681JC | 680P | | 1 |
| C81 | PQCUV1H473MD | 0.047 | | 1 |
| C82 | PQCUV1E104MD | 0.1 | | 1 |
| C83 | PQCUV1H180JC | 18P | | 1 |
| C84 | PQCUV1H180JC | 18P | | 1 |
| C85 | Not Used | | | |
| C86 | ECEA1CK101 | 100 | | 1 |
| C87 | PQCUV1H473MD | 0.047 | | 1 |
| C88 | Not Used | | | |
| C89 | Not Used | | | |
| C90 | PQCUV1H222KB | 0.0022 | | 1 |
| C91 | PQCUV1E104MD | 0.1 | | 1 |
| C92 | ECEA1HKS010 | 1 | | 1 |
| C93 | ECEA1HKS2R2 | 2.2 | | 1 |
| C94 | PQCUV1H473MD | 0.047 | | 1 |
| C95 | ECEA1CKS100 | 10 | | 1 |
| C96 | ECEA1HKS010 | 1 | | 1 |
| C97 | ECEA1HKS2R2 | 2.2 | | 1 |
| C98 | ECEA0JKA331 | 330 | | 1 |
| C99 | ECEA1HKS010 | 1 | | 1 |
| C100 | Not Used | | | |
| C101 | ECEA1VKS4R7 | 4.7 | S | 1 |
| C102 | PQCUV1H473MD | 0.047 | | 1 |
| C103 | PQCUV1H103KB | 0.01 | | 1 |
| C104 | PQCUV1H103KB | 0.01 | | 1 |
| C105 | ECQS2B101FZ | 100P | | 1 |
| C106 | PQCUV1H472KB | 0.0047 | | 1 |
| C107 | PQCUV1H473MD | 0.047 | | 1 |
| C108 | EECW5R5D473 | 0.047 | | 1 |
| C109 | Not Used | | | |
| C110 | ECEA1CKS470 | 47 | | 1 |
| C111 | ECUV1H473MD | 0.047 | | 1 |
| C112 | ECEA1CKS470 | 47 | S | 1 |
| C113 | Not Used | | | |
| C114 | PQCUV1H473MD | 0.047 | | 1 |
| C115 | ECEA1CK101 | 100 | S | 1 |
| C116 | ECEA1CKS470 | 47 | S | 1 |
| C117 | ECUV1H473MD | 0.047 | | 1 |
| C118 | ECEA1CKS100 | 10 | | 1 |
| C119 | Not Used | | | |
| C120 | ECQS2B101FZ | 100P | | 1 |
| C121 | Not Used | | | |
| C122 | ECEA1CK101 | 100 | S | 1 |
| C123 | PQCUV1H102J | 0.001 | | 1 |
| C124 | PQCUV1H102J | 0.001 | | 1 |
| C125 | PQCUV1H103KB | 0.01 | | 1 |
| C126 | PQCUV1H103KB | 0.01 | | 1 |
| C127 | PQCUV1H103KB | 0.01 | | 1 |

| Ref. No. | Part No. | Value | | Pcs |
|---|---|---|---|---|
| C128 | PQCUV1H103KB | 0.01 | | 1 |
| C129 | PQCUV1H102J | 0.001 | | 1 |
| C130 | PQCUV1H103KB | 0.01 | | 1 |
| C131 | PQCUV1H472KB | 0.0047 | | 1 |
| C132 | PQCUV1H102J | 0.001 | | 1 |
| C133 | ECKD2H103KB | 0.01 | | 1 |
| C134 | PQCUV1H472KB | 0.0047 | | 1 |
| C135 | Not Used | | | |
| C136 | Not Used | | | |
| C137 | PQCUV1E104MD | 0.1 | | 1 |
| C138 | PQCUV1H102J | 0.001 | | 1 |
| C139 | Not Used | | | |
| C140 | PQCUV1H102J | 0.001 | | 1 |
| C141 | PQCUV1H101JC | 100P | | 1 |
| C142 | PQCUV1H101JC | 100P | | 1 |
| C143 | PQCUV1H103KB | 0.01 | | 1 |
| C144 | PQCUV1E104MD | 0.1 | | 1 |
| C145 | PQCUV1E104MD | 0.1 | | 1 |
| C146 | PQCUV1E104MD | 0.1 | | 1 |
| C147 | ECEA0JK221 | 220 | | 1 |
| C148 | Not Used | | | |
| C149 | PQCUV1H103KB | 0.01 | | 1 |
| C150 | ECEA1VKS4R7 | 4.7 | S | 1 |
| C151 | Not Used | | | |
| C152 | PQCUV1E104MD | 0.1 | | 1 |
| C153 | ECEA0JKS470 | 47 | | 1 |
| C154 | ECEA1VKS4R7 | 4.7 | S | 1 |
| C155 | ECEA1VKS4R7 | 4.7 | S | 1 |
| C156 | ECUV1H332KB | 0.0033 | | 1 |
| C157 | PQCBC1H103MY | 0.01 | | 1 |

SUB P. C. BOARD PARTS

| | | | | |
|---|---|---|---|---|
| PCB2 | PQWP2T3281BX | SUB P. C. BOARD ASSEMBLY (RTL) | | 1 |
| ICA | PQVITC4S30F | IC | | 1 |
| QB | UN5213 | TRANSISTOR (SI) | S | 1 |
| RC | PQ4R10XJ823 | 82K | | 1 |